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MORTALITY IN AUSTRALIA: POPULATION AND MORTALITY DATA.

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ONE of us (H.O.L.) is preparing a general review of mortality in Australia. It seemed essential, in order to avoid unnecessary repetition in the discussion of mortality from individual causes, that there should be preliminary papers dealing with population statistics, death certification and the classification of deaths by the statistical offices and the more general aspects of mortality and its measurement. In this paper we shall set out the chief sources of data with regard to population and deaths, briefly mention the historical causes that have rendered the age and sex distribution of our Australian population abnormal, and then discuss the practices regarding death certification and the classification of deaths in the statistical offices of Australia, making special mention of the practices in New South Wales as an example of a government statistical office in a State.

AN HISTORICAL AND GEOGRAPHICAL NOTE.

Australia now consists of six States and two Territories, the Northern Territory and the Australian Capital Territory, which Territories were surrendered to the Common-

wealth as from the first day of January, 1911, by South Australia and New South Wales respectively. Prior to Federation in 1901, the political units of the continent were known as Colonies. They became States at Federation. It is convenient to show the dates of settlement *et cetera* in the form of a table (Table I).

Australia is relatively homogeneous as to race, having been colonized principally from the British Isles. The statement that the population is 98% of British stock which has often been made rather exaggerates the degree of this homogeneity. Thus at the 1933 census, we find that there were about 90,000 persons born in Europe, excluding the British Isles. The principal countries of origin and the number of persons born there resident in Australia in 1933 were as follows: Italy 27,000, Germany 17,000, Greece 8000 and Russia 5000. Asiatic-born persons, however, numbered only 25,000. Offspring of all such migrants born in Australia will be classed as British born.

The full-blooded aboriginals do not appear in the statistics of births, deaths, and marriages, nor are they included in the census population of Australia. In New South Wales, up to 1933, aboriginal population and vital statistics were included in the published data, but after 1933 they were excluded from the vital and population statistics and the populations were altered retrospectively to the same basis as the Commonwealth. Half-castes are included in the official statistics if they are working or living in a settled area. The policy of the State and Commonwealth offices has varied in this respect, but in general it may be taken that half-castes are included in the population. Australian statistics, therefore, are of little interest from the point of view of the study of different races living in the same environment, and in this respect contrast with the statistics of the United States of America, for the population of which it is possible to give detailed statistics of the main ethnological components.

The members of the "European" (that is, non-Asiatic and non-indigenous) population of the External Territories are enumerated in the censuses, but are not given in the report as part of the population of Australia. They finally contribute to the total population of Australia, as they generally retire to the mainland. It is their early adult life and childhood that is chiefly spent outside Australia. Those invalided to the mainland will be a selected group added to the population of Australia, but the numbers in any case are small and will affect the Australian mortality statistics only to a trivial extent.

The Age and Sex Distribution of the Australian Population.

The Census and the Intercensal Estimates.

A detailed description of the censuses in Australia prior to Federation is given in the Statistician's report on the census of Australia of 1911 (G. H. Knibbs). Another very full description of the early censuses and "musters" in the earliest days of the Colonies is given in the Statistician's report on the census of 1891 for the Colony of New South Wales (T. A. Coghlan). Since Federation there have been four censuses, carried out under the direction of the Commonwealth Statistician of the day, G. H. Knibbs (in 1911), C. H. Wickens (in 1921), and Roland Wilson (in 1933 and 1947). The Statistician's report which accompanies the detailed tables of each of these

TABLE I.
From the Statistician's Report, 1911 Census.

Colony.	Date of Annexation.	Date of First Permanent Settlement.	Date of Creation as a Separate Colony.	Date of First Census.
New South Wales	1770	1788	1786	1828
Tasmania ..	1788	1803	1825	1841 ¹
South Australia ..	1788	1836	1834	1844
Victoria ..	1770	1834	1851	1854 ¹
Queensland ..	1770	1824	1859	1861 ¹
Western Australia	1829	1829	1829	1848

¹ Previously included in New South Wales.

four censuses gives full technical details on the organization and conduct of the census, together with a copy of the *questionnaire* used and a commentary on the analysis of the tabulated replies to each question.

Until 1901 the census was a function of the Colonies individually, but it was early realized that these colonial censuses had an Australia-wide importance. After a conference of "statists" or "statisticians" in 1875, the censuses commencing with 1881 were held simultaneously in all the Australian Colonies and the census schedules were planned to be in all essential details in accord with those adopted in the United Kingdom. This desire for cooperation between the colonial offices was expressed in the form of further conferences in 1890 and 1900 devoted entirely to the task of achieving uniformity in all aspects of the censuses of 1891 and 1901 respectively.

The censuses, therefore, have been virtually Australian censuses since 1881. From 1881 to 1921 they were held at regular intervals of ten years, but in 1930 it was regrettably decided that the financial condition of the Commonwealth did not permit of a census being held in 1931, and so it was not held until June 30, 1933. The regularity of the time sequence was further upset by the war of 1939 to 1945, and the earliest practicable time at which a census could be taken in the immediate post-war period was June 30, 1947. It is considered unlikely that the next census will be held in 1951 restoring a regular time sequence.

It would be of great advantage if censuses were held at five-yearly instead of ten-yearly intervals, and there are certainly many objections to intervals of more than ten years in peace time. The statisticians of Australia have consistently advocated a census at intervals of five years, but Parliamentary approval has not been obtained.

A time interval of ten years means that estimates of the characteristics of the population subsequent to one

census must be carried on for at least twelve years (it was fourteen years after 1921 and sixteen years after 1933) if allowance is made for the two years or more which must necessarily elapse before detailed data from a census can be released. There is thus an ever-increasing degree of uncertainty year by year before intercensal estimates can be revised in the light of the latest recorded data. Furthermore, questions could be varied from census to census on a five-yearly interval to a greater extent than is possible when the censuses are held at the longer interval.

From the point of view of a survey of mortality trends, census information especially important is the enumerated population by age and sex and marital condition. Information of less importance is the nationality of immigrants, the length of residence in the country and so on. For years between the censuses there are available the intercensal estimates, the most accurate of which are the estimates of total population and the population by sex.

In respect to the particular characteristic in which we are interested—namely, age—it is pointed out in the census reports that misstatement of age is common and that a large number (for example, 48,793 at the census of 1947) of ages are unstated. Therefore, before the age data are used, the recorded ages are adjusted by distributing unstated ages and the adjusted figures are then "graduated" or "smoothed". These graduated or smoothed numbers by single years of age for each sex are published in the "detailed tables" for each census.

Intercensal estimates of total population of each sex are built up from the latest census at quarterly intervals by means of statistics of births and deaths and arrivals and departures. Nowadays the actual numbers recorded as arrivals and departures are used for the estimates without correction; but in the periods from 1911 to 1921 and 1921 to 1933 a predetermined correction based on the experience of the last completed intercensal period was applied to the figures of recorded departures before they were used in the population estimates.

Because of practical difficulties intercensal estimates of certain demographic characteristics of the population—for example, conjugal condition—must be considered to be tentative and are seldom published. For age distribution, however, the Commonwealth Statistician has published estimates as at June 30 each year—by five-yearly age groups from 1934 to 1945 and for single years of age from 1938; but the series is sometimes disturbed by changes in the method of estimation.

Intercensal estimates by age for individual States are made with great caution because of the lack of detailed knowledge of the characteristics of the interstate movement. Therefore, in New South Wales, for instance, it is the custom for the Government Statistician to compare data for census years only or for periods of three years in which the census occurs at approximately the mid-point.

After each census the quarterly estimates of the total population by sex for the immediately preceding intercensal period are revised in the light of the new census data, so that the new quarterly figures are consistent with the recorded census data at each end of the period. These revised intercensal estimates of the total population by sex supersede the original estimates and remain fixed as the final estimates for the intercensal period. Estimates of the total population only are published in the official statistical works, and crude rates of mortality *et cetera* are revised on the new basis.

There are thus generally two sets of figures—those on the original basis and those on the revised basis—to be found in the statistical publications. Whilst it is understood that the various estimates of characteristics of the population are revised by the Commonwealth Statistician in the light of the data of the most recent census, it has not been his practice to publish the revised figures by age. However, such estimates can be obtained on request from the Bureau of Census and Statistics. On appropriate occasions—for example, as at the time of the Supplementary Civilian Register, 1943—the Commonwealth Statistician uses other recorded data for the purpose of revising previous population estimates. In such instances the

revised figures are superseded by the subsequent post-censal revision.

It must be stressed that adequate estimates of the characteristics of the population would be quite out of the question without regular censuses, which should be held at intervals of, at most, ten years and preferably five years.

In the special age groups of early childhood—that is, the first five years of life—it is practical to compute the population of Australia by age at any time by using the records of births and of deaths at these ages and allowing for the effect of overseas migration. This may be done also by States only, if we assume that the infant population is relatively immobile as regards overseas and interstate travel. We may sum up by concluding that intercensal estimates of the population of the whole of Australia by age would be more accurate than similar estimates for the States (or Colonies).

The census, of course, is not held in wartime, so that there is usually not an abnormal number of the Australian population abroad at the time. There were troops overseas at the time of the 1947 census, but they were not enumerated. On the other hand, intercensal estimates do cover war periods, and the policy with respect to defence personnel overseas must be noted. In the war of 1914 to 1918, the population estimates were made by considering the movement of persons abroad on war service as migration; but security regulations prevented a similar practice in the war of 1939 to 1945. The population estimates for the years 1939 to 1947 are not therefore reduced by the movement of the forces overseas. The 1947 census was taken after security regulations had been removed, and because the enumeration is a *de facto* one, troops overseas (British Commonwealth Occupation Force, Japan) were excluded. All movements of troops subsequent to this census are taken into account as migration.

In view of these differing techniques with population estimates, it is as well to record that there are somewhat parallel differences in death statistics. In neither war were deaths of defence personnel outside Australia registered in the Australian death registers, and the records of these deaths remain with the defence departments. On the other hand, deaths of personnel dying in Australia before or after service overseas are registered in Australian registers. Moreover, although in the 1914-1918 war these latter were included in the death statistics, in the 1939-1945 war and up to June 30, 1947, they were not tabulated for statistical purposes as deaths within Australia. Allied defence personnel in Australia together with enemy prisoners of war and internees brought from overseas were excluded from all population statistics. Their deaths, although registered here, were likewise excluded.

As the defence personnel sent overseas were a selected group of healthy persons, mostly of an age at which mortality rates are naturally low in any case, little disturbance will be occasioned by examining mortality rates of the period although there must be some slight loss in the expected number of deaths. We may conclude that irregularities produced in the mortality of males by the two wars as published in the official publications will be slight, and will not in general be of such a magnitude as to alter any of the conclusions we may draw from the mortality statistics. While this may be convenient for us in this study, it is unfortunate that there are no published figures of the mortality in the 1914-1918 war due to the war, dissected with regard to age and sex.

An Historical Note.

There are several historical facts that must be considered here, as they affected the age and sex distribution of the Australian population in the period in which we are interested, 1908 to 1945.

1. Women were not numerous in the population until the 1830's. Thus, in 1825, there were 52,505 persons, of whom 12,217 were females. A comparatively large proportion of these females would be children.

2. Immigration of females has always been less than that of males. The gold booms of the "fifties" and the "eighties" led to great waves of immigration from overseas and also to a good deal of intercolonial migration.

At the early period of the boom there would be an excess of male immigrants, but later there would be an increasing number of prospective brides and of families following the breadwinner.

3. Immigration has rarely ceased in between the notable waves; but there were periods of few immigrants in the last few years of the nineteenth century following the economic depression of 1893 and in the years of the early thirties of this century following the economic depression. These were two periods of net loss by migration.

4. Smaller waves of immigration occurred in the years preceding and following the first world war, and of course we are now witnessing a further wave after the recent war.

5. In the last century and in the early years of this century, a high birth rate led to an increased proportion of young persons in the population. This effect was enhanced by the flow of immigration at the same time. So that in 1908, at the beginning of the period we are studying, the population of Australia was a young one, in the sense that it contained an abnormally high proportion of young persons.

6. Owing to the decline in the birth rate, the proportion of old persons is now much greater than at the turn of the century. This aging of the population is only to a

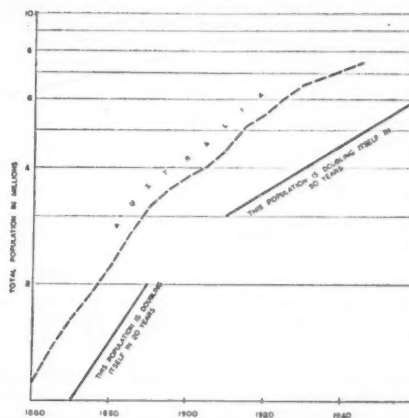


FIGURE I.

The population of Australia (persons). Semi-logarithmic grid.

very slight degree dependent on the reduced mortality rates at all ages. In fact, the effect would have been less marked if the infantile mortality had not fallen so dramatically over the last forty years. This decrease in the infantile mortality and in the mortality of childhood really diminished the effect of the decline in the birth rate on the age distribution of the population.

7. Great changes have also occurred in the masculinity of the population, partly owing to the causes already mentioned and partly to the more favourable death rates of the female at all ages. These changes are best noted in the great fall that has occurred in the masculinity at the higher ages. For example, at ages seventy-five to seventy-nine years the degrees of masculinity—that is, the number of males per hundred females, as measured at the censuses of 1891, 1901, 1911, 1921, 1933 and 1947—have been 150, 131, 114, 96, 99 and 83 respectively. Some of these factors are displayed in the diagrams. In Figure I we have plotted the population of Australia logarithmically. This device has the advantage that the relative rate of increase at any given time is given by the slope of the tangent to the curve. For comparison we have shown the slopes that would be attained by populations that were doubling themselves at the rate of once every twenty years and once every fifty years, respectively. We notice that at the end of the nineteenth century the population would have doubled itself in twenty years, but that the

rate has since fallen off, and at the rate of increase holding in the years 1920 to 1945 it would take fifty years for the population to double itself. If the population is plotted on an ordinary arithmetic scale, then the absolute rate of increase in total population is seen to have been approximately constant for some time. Such a graph or table does not reveal the more precise information that the relative rate of increase is falling.

The increase in the population has been analysed by the Commonwealth Statistician into "natural increase" (or the excess of births over deaths) and "net migration" (or the difference between immigration and emigration). Details may be found in the Year Books of the Commonwealth of Australia.

The Life Table Populations.

We must introduce here the concept of the life table population. A constant influx of births into a population is imagined, and this ideal population is imagined to have mortality rates by age and sex identical with the observed rates in some actual population, say the popula-

the 1947 census. The great increase in the proportion of old persons is apparent especially for females.

It is customary to compare populations graphically by means of a population pyramid, which is really only a special form of histogram, constructed by assigning an equal area to the population of each sex. (We have followed this practice, but an alternative is to assign a given area to the whole population, more especially if it is desired to show the masculinity of the whole population, changing with age.) A histogram of the age distribution of each of these two populations is constructed. Age groups or class intervals of five years or of ten years may be used. There are advantages in either. We have chosen those age groups that we shall use later for standardization—namely, a class of persons aged nil to four years last birthday, and then classes of ten years, five to fourteen years last birthday and so on up to the age of seventy-five years, and finally a class of persons seventy-five years of age and over. The two histograms are drawn base to base and a pyramidal appearance is noted as a rule, as can be seen in the diagrams. It is of some importance in com-

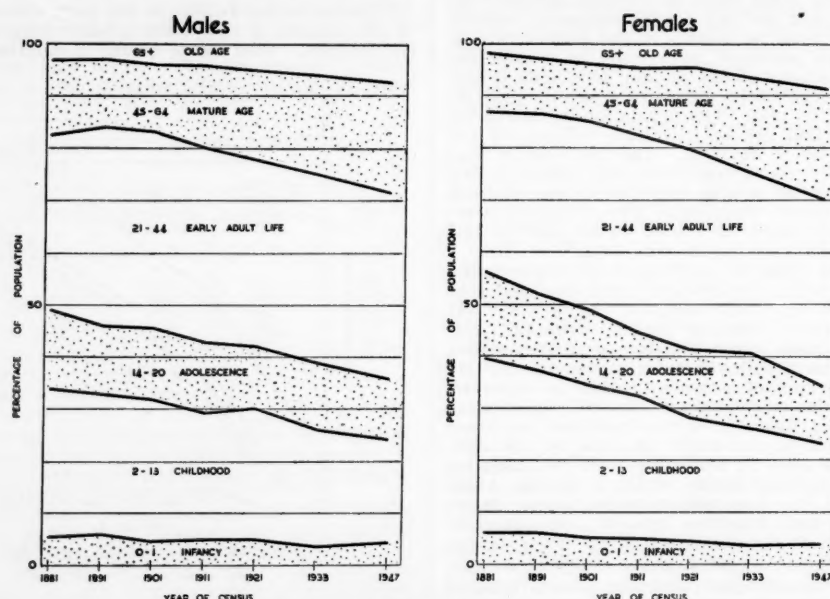


FIGURE II.

The "natural age groups" of the populations of Australia enumerated at the Censuses.

tion of Australia in the years 1932 to 1934. After an elapse of some time the population will attain a stable form, the form of a life table population, and the number of births and deaths will be equal. The life table death rate then can be readily shown to be the reciprocal of the expectation of life at birth. Although such a population may appear highly artificial, it is of great theoretical interest, and in fact it has the structure to which all Western European populations are now tending, since many of them have a birth rate barely sufficient to maintain themselves indefinitely at a constant level, were the fertility rates by age to remain constant over a prolonged period of time. Judged by such a population, the population of Australia in 1891 was indeed young, and there still remained in the later years (for example, 1933) a deficit of persons in the older age groups. In Figure II we show the change in the proportions of the population in certain broad age groups in Australia, to which the Commonwealth Statistician has applied the term "natural age groups", from the time of the 1891 censuses up until the most recent census of 1947. The numbers on which this diagram is based have been taken from the statistician's report on the 1933 census and from a bulletin of

paring the age distribution of different populations or of the same population at different times to assign to each population the same area. Otherwise, one is quite unable to detect any but the grossest change in age distribution, or one may be misled into concluding that apparent differences are real. Thus there is great difficulty in comparing the age distributions of New South Wales and Tasmania in the Statistician's report on the 1933 census, whereas such a comparison would have been very easy with one of the foregoing conventions as to the areas to be assigned. In Figure III we show the census populations of Australia for 1891 and 1933 superimposed in order to illustrate the aging of the population in the intervening period. In Figure IV we show the two standard populations to which we shall be making constant reference. The first is the actual (census) population of England and Wales of 1901, and the second is the life-table population which we have computed from the data of the two life tables, male and female, of the 1933 census. It will be seen that the actual populations of England and Wales in 1901, and those of Australia in 1891 and 1933, drawn in Figure III to the same scale, are all young populations as compared with the life-table population. It is apparent from

Figure III that there has been a great relative increase in the age groups of sixty-five years and over. We shall see later that this fact has a very great importance in the correct interpretation of the cancer rates, and that errors in analysing many other crude rates are made as soon as the factor of age distribution is overlooked.

The Registration of Deaths and their Classification by the Statistical Offices.

The practices and organization of the statistical offices in Australia are so diverse that it is not possible to give more than a brief summary of the history and practice of one of the offices, that of New South Wales, as an illustration. In England and Wales and in Scotland, the recording office and the statistical office are always under the same direction. This was originally so in all the Australian Colonies when the registration systems were introduced. In many of the Colonies, the Registrar-General, or Government Statist as he was termed in some, was charged with the responsibility of compiling statistics in the older meaning of the term, so that he was responsible not only

in accordance with old practice as part of their routine duties. The cards for the Commonwealth Statistician, however, were copied in the office of the Registrar-General. With the introduction of a punch card system and mechanical sorting in the New South Wales Bureau in 1921, the abstracts from the records of the Registrar-General were made in sheet form for ease in coding, and it was not long before advantage was taken of this to avoid duplication of work. The sheets prepared by the State office were forwarded to the Commonwealth Bureau, where it was then possible for check coding to be done before their own sets of cards were punched. Almost complete uniformity of results was then made practicable.

The system described was that of the Colony and State of New South Wales, but it is probable that a similar evolution occurred in the other States. One of the necessities for complete uniformity was a death certificate of similar type for each State. This was attained only in 1949, when Western Australia adopted a form of death certificate similar to those used in the other States.

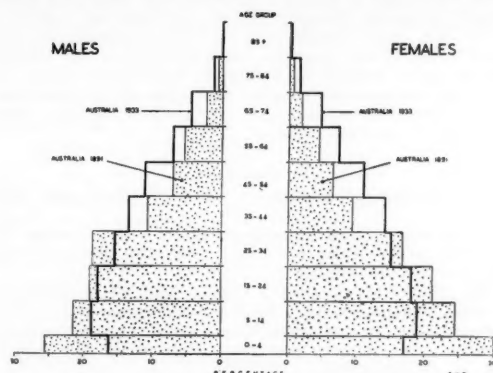


FIGURE III.¹

The age distribution of the Australian populations at the censuses of 1891 and 1933.

for the registration of land ownership, trade returns, births, deaths and marriages *et cetera*, but also for the production of statistical summaries on these subjects. In some of the States—for example, Victoria and South Australia—as they have been called since Federation, this position still obtains. In New South Wales a division of the functions was brought about in July, 1886, by the creation of a separate Bureau of Statistics for the compilation of official statistics generally. Registration of births, deaths and marriages still continued to be handled by the Registrar-General, but all summaries from this time were prepared and published by the Bureau of Statistics. The taking of the census since the creation of the office in New South Wales fell in the province of the Government Statistician, as the director of this latter office was known. To this division of functions a further complication was added by Federation in 1901, and by the subsequent Act, the *Census and Statistics Act, 1905*, which led to the formation of the Bureau of Census and Statistics in 1906 under the directorship of G. H. Knibbs. From the year 1907 onwards there are summaries of the Australian vital statistics experience published by this Federal bureau. We have commenced our consolidation of the Australian data from the year 1908, largely because in 1907 the results were published quarterly.

For many years both State and Commonwealth statisticians received statistical abstracts of the death registers of the States, and the Commonwealth produced independent mortality statistics. These abstracts in the years up to 1921 in New South Wales were made out individual cards for manual sorting and tabulation. Cards for the State figures came from the District Registrars

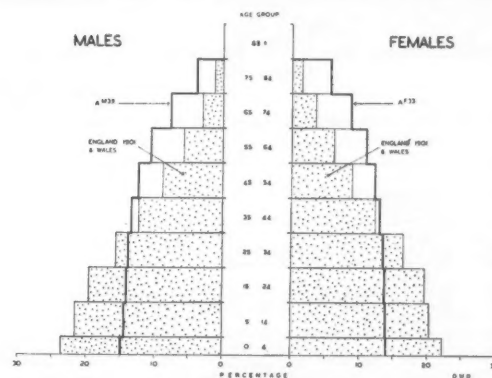


FIGURE IV.

The standard populations: England and Wales, 1901. The life-table populations from the male and female life tables of the 1933 Australian census.

Recently the war has affected the systems in the States and the Commonwealth. Thus it was found necessary, in order to economize in staff, for the Commonwealth bureau to take over the coding of the death certificates in New South Wales for the year 1939 and subsequent years and to make subtabulations for the State of New South Wales for the tables published annually in the "Statistical Register". Further information may be found in the official year books of the States and of the Commonwealth. Detailed statistical tables are given for the States in the form of statistical registers and by the Commonwealth in the form of the bulletin that has been published under the varying titles "Demography", "Australian Demography" and "Population and Vital Statistics". We may refer the reader to the review by G. H. Knibbs (1918) of Australian official statistics, in which is given an outline of the historical development of the colonial offices and the later formation of the Commonwealth Bureau, and in which is to be found an extensive bibliography of the official publications in Australia containing statistical matter. In a later paper Knibbs (1929) discusses the International List.

Classification of Causes of Death in Australia.

Up to 1906 the system of classifying causes of death in each State was identical with that in use by the Registrar General of England and Wales.

In 1906 a Statisticians' Conference for the Unification of Australian Statistical Methods agreed to adopt the Bertillon Classification, as it was then more generally known; this on further decennial revisions became the International List of Causes of Death. This was used retrospectively in all States as from January 1, 1906.

Causes of death for Australia as a whole were first published for 1907 and were based on this classification.

¹ The scale shown in Figures III and IV applies to the ten-year age group.

The International List has been revised approximately every ten years and the revised form was used as soon as practicable in Australia. The periods for which Australian mortality statistics were published on the basis of each successive revision are as shown in Table II.

No critical studies are available on the effect of these revisions in the International List on the mortality statistics.

Before Federation the various Colonies printed their own Nosological Indexes—for example, New South Wales in 1887, 1892 and 1898. The first revision of the Bertillon Classification by an International Commission (1900) took place before the Commonwealth Bureau of Census and Statistics was created, but at the 1906 Conference of Statisticians, the Commonwealth Bureau undertook to translate the French version into English so as to provide a uniform basis of classification throughout Australia. This translation was published in 1907. It is worthy of note that G. H. Knibbs, the first Commonwealth Statistician, was the representative of Australia in 1909 on the International Commission for the 1909 (or second)

TABLE II.

Year.	Decennial Revision.	Period for which Australian Mortality Statistics were Published on each Basis.
1893	Introduced by International Statistical Institute	—
1899	Reviewed by International Statistical Institute	—
1900	First revision by International Commission	1906 to 1909.
1909	Second revision by International Commission	1910 to 1921.
1920	Third revision by International Commission	1922 to 1930.
1929	Fourth revision by International Commission	1931 to 1939.
1938	Fifth revision by International Commission	1940 to date.
1948	Sixth revision by International Conference, which approved the classification prepared by the Expert Committee of the World Health Organization.	Has not yet been used in published statistics.

revision of the International List of the Causes of Death. This was the first and only time that a direct representative of the Australian statistical offices has been present at such a gathering.

When the International List was revised in 1909, it was considered important that it should be used in precisely the same form by the different English-speaking offices and in this connexion at the meetings in Paris, G. H. Knibbs for Australia and the representative of the United States considered that the two countries should use the same authoritative English translation of the most recent revision. The Bureau of the Census of the United States thereupon undertook the work of translation and publication. The Australian edition of the 1909 revision was practically a literal reprint of the relevant sections of the United States temporary manual.

Shortly after this the more extensive "Manual of the International List of Causes of Death" (1911) was published by the United States Bureau of the Census, and it appears that this supplanted the Australian edition and the United States temporary manual. After this the United States Manual of the International List based on each successive revision was used, and no attempt was made to produce an Australian edition (see references).

The adoption of these manuals as the basic guide for Australian statistical authorities does not imply that the Australian and American titles were identical. Each country had its own adaptation of various titles to suit its special requirements. Indeed, the greatest departure in this respect was the adoption as from January 1, 1928, on the recommendation of the Federal Health Council, of a considerable number of titles and sub-titles from the manual of the Registrar-General of England and Wales (1920).

In connexion with the International List of Causes of Death, up to and including the fifth revision, three points

are of great importance. (i) Only the order, naming and numbering of titles (or rubrics) are common to different countries. (ii) There had been no international agreement on a list of assignments of individual diagnostic terms to the various titles or rubrics of the International List. (iii) No guidance was laid down for selecting a single cause for tabulation from a statement of multiple causes.

Difficulties and differences caused by the first and second points above are relatively unimportant compared with those which arise under the third. The need to select a single cause for tabulation is dictated by the practical difficulties in the presentation of tabulations showing a classification by more than one cause of death. The selection of this single cause or "primary cause" or "underlying cause" as it is frequently termed creates a fundamental difficulty which has been met in different countries in various ways.

There is little doubt that in Australia before 1906 the rules of selection followed the English principles of those times; but after the introduction of the International List in 1906 it is not now clear what rules of selection were followed, although it was probably on the American basis. The only recorded decision which can now be traced is that at the 1925 Conference of Statisticians it was resolved "that it was desirable in Australia in the classification of joint causes of death to follow as closely as possible the rules laid down by the Index of Joint Causes of Death issued by the U.S. Bureau of the Census in 1914, or the latest revision thereof".

SUMMARY.

1. The sources of population data for Australia have been noted.
2. There are certain historical events which render the population of Australia abnormal from the point of view of age and sex distribution.
3. The practices of census taking and of making the intercensal estimates have been briefly reviewed.
4. Population in Australia has passed through several phases of rapid growth due to a high birth rate and to waves of immigration.
5. The concept of a life-table population is briefly mentioned.
6. The age distributions of the population at the times of the censuses from 1881 to 1947 have been described. A general aging of the population has occurred.
7. The registration of deaths and their classification by the statistical offices are described for Australia generally and for the State of New South Wales in particular.
8. The adoption of the coding manuals of the Bureau of the Census of the United States of America has been noted.

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A REGIONAL PLAN OF HOSPITAL DEVELOPMENT.¹

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HOSPITALS are born, usually from the efforts of an individual or a group of individuals, members of a growing community and seized with the needs of their families and friends for proper health facilities.

In any State, therefore, including our own, the final picture of hospital development reflects this sporadic and necessarily haphazard growth. Some areas are well provided for, others suffer a sad lack of all except the most primitive needs.

More serious to the present consideration is it that our public-minded forebears paid no heed to the needs of the State or country at large, but naturally applied themselves to the requirements of a strictly local area, usually a growing town. We inherit, then, some 52 public hospitals in this State, developed according to no overall State pattern, fortuitous in their site, size and scope, and isolated in their activities.

The purpose of this paper is to suggest a plan for the proper integration of all existing hospital activities and a coordinating influence for future developments.

From every viewpoint—economic, educational or efficient—the existing state is obviously incompatible with the provision of adequate medical care for a growing community. An over-all comprehensive policy for hospital development is essential in any health service.

End of an Era.

For a century, the attention of the medical profession has been focused upon morbid pathology—the study of diseased tissue—as the primary source of its knowledge of disease processes. This period of medical thought followed naturally upon the work of Virchow, who directed attention forcibly to the progress of disease in human tissue and its end result. The benefits of this revolution were profound, and its effects far reaching—our knowledge of disease advanced by leaps and bounds. Better treatment followed the improved understanding of pathology, and no period in human history was more productive from the patient's point of view.

The results must not blind us to the emphasis which this era has taught doctors to place upon established disease and its treatment, to the almost total neglect of the healthy individual and his maintenance as such.

The present concept, as pioneered by Ryle at Oxford, would shift the emphasis from pathology of advanced disease to the healthy individual and the earliest manifestations of disease. This does not imply a neglect of pathological processes, whether early or late, or a minimization of their value; but one welcomes the attitude of mind which stresses the preservation of good health, and

¹ Read at a meeting of the Victorian Branch of the British Medical Association on November 9, 1949.

believes that the two concepts must proceed hand in hand to the benefit of medical education and progress.

Medicine today is centred primarily in the teaching hospital at the axis of the community. It is for the hospital to carry the fight to the periphery—that is, the patient's home—and end the period during which the hospital has waited for disease, often in an advanced form, to present itself.

The Place of the Hospital in this New Development.

The hospital, including its university associations, is and must remain the centre of medical thought and education. During the Virchow era it developed improved methods of diagnosis and treatment, and we take justifiable pride today in the results as indicated by a decrease in mortality and increased longevity.

This is not enough. The hospital has, as it were, waited for disease to present itself at its door before applying itself energetically to cure and eradication.

Apply the principle of prevention to hospital work, and it is apparent that the idea of the hospital as a static institution has gone. The present necessity is to ensure that the knowledge of medicine in all its aspects is carried to the individual practising doctor, and through him to the patient's home, where disease begins. Only thus can the maximum benefit of available medical resources, including men and women, the hospital with its fully equipped departments, and above all the educational facilities, be brought to every member of the community.

Nor should we think in terms of doctors alone. Any development must include the entire hospital staff and equipment. These include the medical ancillaries, nursing technical specialties, X-ray department, laboratories, physiotherapy, occupational therapy, rehabilitation and administration.

The Present Hospital Situation.

In the State of Victoria there are three hospital types:

1. The teaching hospital. This, with the University of Melbourne, is the inevitable source of medical progress—inevitable, because of its university association, its prestige and consequent attraction to the best medical brains, its resources and its ability to provide the best in medical equipment.

2. The base hospital. This is non-teaching and is equipped with all except the most technical specialties.

3. The country, cottage or small community hospital. This is a place wherein the doctor who is comparatively isolated may treat his patients. These hospitals do not teach, they are poorly equipped, and have no specialized departments.

Hospital Isolation.

It is a fact that individual hospitals within the State function as isolated units, and coordinating factors are few. British Medical Association meetings, post-graduate sessions, and college meetings do much to disseminate knowledge from the centre to the periphery. They are sporadic, and in that they are not primarily hospital integrating factors, they are of little value from our present viewpoint.

It is recognized that not all problems of medical care will be found and solved in hospitals; but the hospital is the focal point of modern medicine, bringing patients, physicians, nurses and ancillary workers and their equipment together under ideal conditions.

Where money and help are limited, the hospital is the place for action to be concentrated most profitably. At the same time, it is economically impossible to provide other than the teaching hospitals with all modern facilities. The base hospital, then, becomes an accessory—well found, but neither equipped nor staffed for the most technical and expensive specialties. The third category, the country hospital, equipped simply, provides only very limited treatment and diagnostic aids.

It follows that in any plan for the better utilization of facilities, the closest cooperation between teaching hospital and base hospital, and between base hospital and country hospital, is vital. This, at present, is almost non-existent.

Such bodies as the Victorian Hospitals Association, a buying agency, and the Metropolitan Hospitals Association, are true coordinators in name only.

The Hospitals and Charities Commission serves a necessary purpose by its general supervision of hospital economy and efficiency, but coordinates only in relation to the broadest aspects. The experimental School of Nurse Training proposed by the Hospitals and Charities Commission, with centralization of facilities for five hospitals, is an example of coordination on this plane—dictated primarily by economic necessity, but bearing a shrewd relation to better usage of nurses and improved training.

The newly-born Australian Hospitals Association may do much to raise the quality of hospital service by urging the adoption of high hospital standards throughout the country.

None of these supplies the type of coordinating factor desired for the dissemination of knowledge between hospitals, though the nurse training scheme might, with extension, provide for one aspect.

A fair comparison is obtained by likening the existing state to the anomaly of three factories—a large factory, a medium-sized factory, and a small factory, all owned by the same company, all making the same article, and all using the same materials. If we compare these factories to hospitals, the owner in our case is the people, the article manufactured is health, and the materials used are hospital supplies. Our factories, without reference to each other, without coordination of effort, go about their daily tasks. Worst of all, there is no endeavour by the modern institution—the teaching hospital—to educate its weaker sisters, nor is there insistence by the latter upon their rightful dues. We should be out of business in a year if we used these methods in a competitive business world where results count. The isolated and sporadic efforts of individual organizations are excepted, and reference is confined to the hospital organization only.

At present, too, because of these isolationist factors, we face a constant and steady drift of men and women to the centre of education. The best brains in all branches of medical work, including the ancillaries, are tempted by the educational opportunities to stay about the university centre. This is an undesirable and dangerous aspect of our system.

Here is a vicious circle—the university centre, the drift of men to the centre, and the continued growth of the latter at the expense of the peripheral areas. It can be broken only through the adoption of means whereby the outlying hospitals can be linked to the university hospitals and strengthened thereby.

Hospital Integration.

What might be interchanged between hospitals if facilities existed? Note that the process is one of interchange of ideas, and not by any means a one-way traffic from the central teaching hospital to the periphery. Experience has taught that the small hospital and the general practitioner have much to contribute to medical education. So in any proposed scheme emphasis must be laid upon the necessity for this two-way interchange.

Medical education includes post-graduate education of doctors, nurses, laboratory technicians, radiographers, physiotherapists, occupational therapists, rehabilitation and speech therapists, social service workers, and in fact all ancillary medical workers. In some of these specialties undergraduate training might be coordinated, as, for example, among nurses.

Other subjects for interchange of ideas might be the training of hospital administrators, the development of modern hospital equipment, hospital planning, modern hospital administrative systems and hospital law. Modern hospital administrative systems include records, purchasing, accounting, personnel management and public relations.

These are some of the matters which might be developed amongst the hospitals with mutual benefit, but particularly with benefit to those situated at a distance from the centre of progress.

How to Achieve this Integration.

This integration might be achieved by creating a democratic working group of public hospitals, through a voluntary association of the general public, the hospitals and their staffs. In developing the theme I acknowledge gladly the pioneer work done in this sphere by Dr. Albert Kaiser and Dr. Paul A. Lembke, of Rochester, United States of America. With their work as a basis, it is suggested that the hospitals of a part of the State should be coordinated into a region. The region should include one teaching hospital as a focal point, together with a number of base hospitals and country hospitals. Organization of the region should not be directive, but democratic and voluntary, and should not overlap the existing responsibilities of the Hospitals and Charities Commission.

To achieve this, each hospital desirous of participating should nominate one or two committee representatives to a central council; the public should have one representative from each participating shire or municipality. From the council, an executive committee would be appointed to determine matters of policy and effect a general management of the region. It should be assisted in this by a full-time salaried executive staff, comprising eight to ten

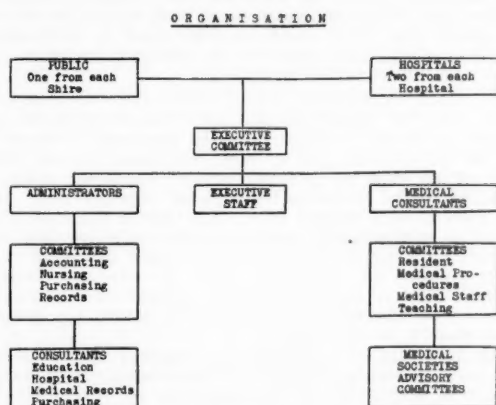


FIGURE 1.

persons, expert in hospital administration, nursing matters, business management, statistics and medical records. In association with these bodies there should be appointed consultants: medical men to advise on medical matters concerning the region; consultants upon education generally, medical records, purchasing and such like; consultant administrators and consultants from the external medical bodies such as the British Medical Association.

In such a scheme it would be for the council, democratically elected, to determine the scope of development and the method of its application. The executive staff with the aid of the consultants would carry the council's wishes into effect and place affairs of the region before the council at its regular meetings. A perusal of the objects of the Council of Rochester Regional Hospital Organization indicates the general lines of action which might be followed: (a) financial aid planning for rational distribution of adequate facilities throughout the region; (b) the promulgation of approved procedures throughout the region; (c) the development of such services as may be considered desirable or practicable; (d) the development of consultant services in clinical and laboratory medicine and in institutional administration; (e) organization and administration of continuous educational programmes for physicians, surgeons, dentists and hospital personnel, with emphasis on post-graduate study; (f) such other health activities within the region as the hospitals may mutually agree upon from time to time. With the expansion of such ideals the needs of one hospital or even one town become blended into a regional picture.

The planning of additions to hospitals and the building of new hospitals become related to the needs of the community as a whole, and not, as now, to isolated efforts by a group of individuals in one particular section of the community.

The promulgation of approved procedures refers to such matters as the preparation of sterile solutions, improved techniques (as for instance in blood transfusions), simple but effective measures for combating noise—matters as diverse in fact as the sharpening of needles and the use of a histokine. It means in effect that the smallest hospital in the State is in constant touch with the most modern methods of hospital management.

The development of joint administrative services refers to such matters as the development of joint purchasing services, the adoption of uniform records systems, the standardization of approved procedures in accounting, personnel management, purchasing, nursing and such like, with economy and efficiency to all.

The development of consultant services refers to the provision of pathologists where none exist, and the similar provision of radiologists, clinical pathologists, physiotherapists and so on, whether by rotation of service, by the formation of a central service with junior assistants working therefrom, or by any means the region may develop. The important aspect is the regional solution of a joint problem.

The educational programme, to be successful, must be well organized, continuous and expertly planned. It requires the collaboration and enthusiasm of doctors, educators and administrators. Planned on this scale, it is the greatest single reason for the adoption of a scheme of this sort.

Finally, the object in the Rochester plan, "such other health activities within the region as the hospitals may mutually agree upon", refers, of course, to the forging of the final link between base or community hospital and the home and family. The health centre has been suggested as an ideal and logical development to provide the link. The exact form it takes will depend upon experiment, but we know its requirements—a small centre situated at the periphery having the function of providing a preventive health service to the family. It should provide: preventive health examinations, clinical, radiological and laboratory; ante-natal services; child health and welfare services. It should, in the end, be the laboratory from which the material will be forthcoming to engage more and more the research workers of the future, as the post-mortem rooms have stimulated them in the past. Isolated, it can serve a useful purpose; integrated with an educational and research centre, it might become the beacon leading the way to the next phase of medical progress.

Nationalization of medicine need not concern us here; such a centre might readily be adapted to private or national service. Portion of its work should and must be subsidized, but private practice might continue without interference.

Educational Methods.

Large hospitals would open their doors, for regular ward rounds and clinical meetings, to all physicians and surgeons in the region. Regular and frequent courses of post-graduate instruction should be planned. These should be varied and adapted to meet the needs of individuals, including one-day demonstrations and short courses of a week, but also longer planned courses of instruction up to several months for men who would be resident in the teaching hospital and have the facilities of that institution opened to them. These are designed, of course, to offer medical staffs an opportunity to obtain proficiency in their specialties. When such courses have been provided on this basis the response has been surprisingly good. Local men were prepared to leave their practices for even six months at a time in order to take advantage of planned post-graduate study.

Similarly, post-graduate work in all specialized departments should be provided—in anaesthesia, radiology, pathology, and in fact wherever the demand exists.

Planned visits by senior members of the teaching hospital staff are valuable to smaller hospitals. These might take one of several forms: clinical meetings conducted by the teacher in the smaller hospital; the presentation by local practitioners of their cases to the teacher and a general discussion ensuing amongst the group; or the presentation of a paper by the teacher to the local hospital staff—the subject chosen by the staff. The greatest interest and enthusiasm are stimulated when the teacher undertakes ward rounds in the smaller hospital.

When such methods are applied to all hospital departments the effect is not difficult to imagine. Where the quality of material provided is good, doctors will travel many miles to avail themselves of the opportunity.

The practice of resident rotation could be grafted upon such a project. When the quality of a hospital's work proved satisfactory, the teaching hospital should allow some of its resident medical officers to spend a period at that hospital. If the resident was mature and had had several years' experience at a teaching hospital his influence could be important to the local hospital standards. Nor would the time be wasted for the resident; an appreciation of the problems of the general practitioner and the local specialists, and a knowledge of their difficulties in practice, would provide a balance and a proper perspective to the present post-graduate education of resident medical officers.

Some teaching schools have experimented with an extension of this in the form of an apprenticeship system, allowing medical students to serve a period of apprenticeship with approved general practitioners.

These matters are for the medical teachers to decide. The important consideration before us is the development of the idea that the union of the teaching hospital with the peripheral institution opens new avenues in medical education.

The efficiency of a hospital depends primarily upon its medical staff; but no staff can function well in the absence of sound administrative methods. The scheme must provide for the regular education of small hospital administrators, whether they be doctors, managers, secretaries or matrons. Regular courses of instruction along the same lines as those mentioned for doctors, and the regular promulgation of tried methods in all hospital procedures would in themselves provide a sound reason for the creation of a regional scheme. Regular conferences, at which administrators might discuss their problems, interchange their ideas, and observe new developments, would be important.

An educational programme for nurses, radiographers and technicians follows similar lines and needs no enlargement, except to stress again the important developments which are likely to accrue to the nursing profession from the proposed regionalization of nurse training by the Hospitals and Charities Commission. The development of regional schools of nurse training throughout the country with centralized post-graduate centres is a logical development.

For ancillary workers the scheme should include courses of post-graduate instruction, the promulgation of recommended procedures, and regular visits by members of the consulting and executive staff, expert in their fields.

The development of consultative specialist services is of importance and would fall within the ambit of such a scheme. This would indicate a review of the available services in laboratories and X-ray services, and regional planning for their extension and economic utilization. This would mean eventually the provision of such facilities to the most remote hospital. A pattern which has done much to lift the standards of hospitals elsewhere has been achieved by the creation of regional departments of pathology, employing, under a senior, a number of junior men to undertake periodic rounds of the smaller hospitals to provide for their needs in that field and to stimulate an interest by the local staff in the pathology of their hospital. In this field alone, in a small hospital, the fact that post-mortem examinations are performed at intervals is a surprising stimulus to improved hospital work.

The scheme envisages here the regular provision of services in clinical pathology and pathology to the smallest

hospital. The regional centres (base hospitals) must be located so as to provide this service upon material sent to them.

Need for a Separate Democratic Control.

It may be asked why it is considered necessary to create a separate organization for such a plan when an integrating body such as the Hospitals and Charities Commission already exists in this State. The answer is not far to seek.

The Hospitals and Charities Commission is a State-appointed body empowered to provide an efficient hospital organization. To some extent it must, through economic considerations, provide for a regional view of problems. One has been mentioned—nurse training. Another must inevitably be the consideration of specialist services in relation to the teaching hospitals. In the fullness of time, too, it is probable that the Hospitals and Charities Commission will develop consultative specialist services throughout the country and interest itself increasingly in the training of hospital administrators. It will never, to my view, initiate such matters as the post-graduate education of medical men, and should not be expected to do so. This must arise from within the university, the hospitals themselves and the profession. The governing bodies of the hospitals would be prepared more readily to accept suggestions and promulgated ideas from a democratic body of which they were members than from a government-inspired edict. The suspicion of economic necessity falls upon the government edict.

A council as proposed would act in the closest association with the Hospitals and Charities Commission and should, with its executive body, be frequently referred to by the Commission; for example, the plans for the extension of an existing hospital or its rebuilding might be referred to the executive for regional consideration. Does the plan provide enough beds? Are they of the right type? Are the contemplated additions necessary for the community as a whole or related to a single township? Are they planned in conformity with the modern needs of patient, doctor, nurse and staff? These and a hundred other questions require consideration before the simplest plan should be developed.

An incentive to participating hospitals might be held out, so that perhaps a portion of their building programme would be met if the council approved.

The cost of such a scheme may be gauged from a similar experimental scheme, developing a region of 20 or 30 hospitals. A sum of £100,000 *per annum* was provided for five years. Of this a sum of £66,000 *per annum* was allotted to capital improvement of small community hospitals and £34,000 to education, advisory services and administration.

The whole subject of inter-hospital relationship might well have inspired Marcus Aurelius when he wrote: "We are born for co-operation, as are the feet, the hands, the eyelids, and the upper and lower jaws." (Marcus Aurelius, "Meditations", Book II, Section 1).

FURTHER EXPERIENCES WITH THE INVERSION OPERATION FOR INDIRECT INGUINAL HERNIA.

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THIS paper is a continuation of two previous papers (Craig, 1948, 1949). The three papers taken together describe an investigation into the possibility of reducing the recurrence rate after an operation in which only the sac is dealt with and in which no plastic procedure is used. In the first of these papers it was suggested that the only true recurrence after simple removal of the sac was an indirect recurrence, in which the sac occupied the position formerly occupied by the original sac, and, further, that the direct recurrence after extensive plastic procedures was due entirely to the operative interference with the

posterior wall of the canal. In the first paper the method of dealing with the sac by inversion was described and the method was put forward as one which might reduce the indirect recurrence rate. The second paper described a series of 130 cases of hernia treated by the inversion method. The purpose of the present paper is, firstly, to

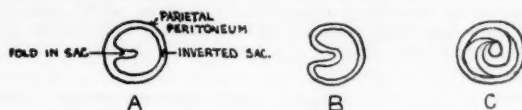


FIGURE I.

A: Shows how a fold may appear in the inverted sac. This forms an opening into the peritoneal cavity.
B: Shows how the fold may be obliterated by sewing the parietal peritoneum into the sac. C: Shows how the fold may be obliterated by gently twisting the sac.

describe certain changes in technique that have been made necessary by further experience and, secondly, to review the series of 130 cases again mainly from the point of view of the recurrences.

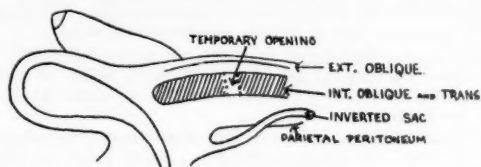


FIGURE II.

Showing how, after the sac has been inverted through the temporary opening in the fleshy muscles, it is taken up between the peritoneum and the transversalis muscle.

Changes in Technique.

The main alterations in technique have been brought about by the following occurrences.

1. It was described in the last paper how inversion was brought about by passing a director through the open mouth of the sac and out again through the peritoneum

paper, but they did not belong to this series. Two followed the inversion of a direct "tubular" sac of the Ogilvie type, and one followed the inversion of a femoral sac. On each of these occasions, however, the sac was thick and heavy, and recurrence might have been expected, as in each case the sac held the muscle fibres apart. However, the sac in the case under discussion was thin and pliable. It occurred in a man, aged forty-one years, who had been operated on seventeen months prior to the recurrence. His original hernia had been present for ten years before operation. The recurrence was very easily dealt with by separating the sac right down to the peritoneum, ligating it, cutting the excess away and then closing the gap in the muscles. This was done eighteen months ago and so far there has been no further recurrence.

The alterations in technique that have resulted from these experiences are as follows. When the sac has been completely freed, a spot is selected through which the sac is to be inverted. This spot is 2.5 to 3.0 centimetres lateral and slightly cranial to the internal ring. Instead of pushing a director through the muscles at this spot, as was previously done, the muscles are split open with dissecting scissors in the line of their fibres for about two centimetres and right down to the peritoneum. With the patient in the Trendelenburg position the director is passed through the open mouth of the sac as before and the end is pressed against the peritoneum, which is visible through the new opening. It is by these means possible to make quite certain that no bowel has been caught. The director is then pushed through the peritoneum and the sac is inverted as before. The sac is sewn to the parietal peritoneum where it passes through it by a continuous suture of fine silk. In doing this care has to be taken not to leave a fold of sac which would lead right into the peritoneal cavity. This is illustrated in Figure I, A. The difficulty may be overcome by suturing as in Figure I, B, or by gently twisting the sac before sewing (Figure I, C). It is possible that the presence of such a fold may have caused the recurrence which has been described. On the other hand, the inverted sac may have opened up the muscles somewhat, so that a "pulsion diverticulum" could have been pushed through a weakened area. To guard against this latter happening the sac is not now taken through the muscles at all, but, after having been sewn to the parietal peritoneum, it is taken up between the parietal peritoneum and the transversalis

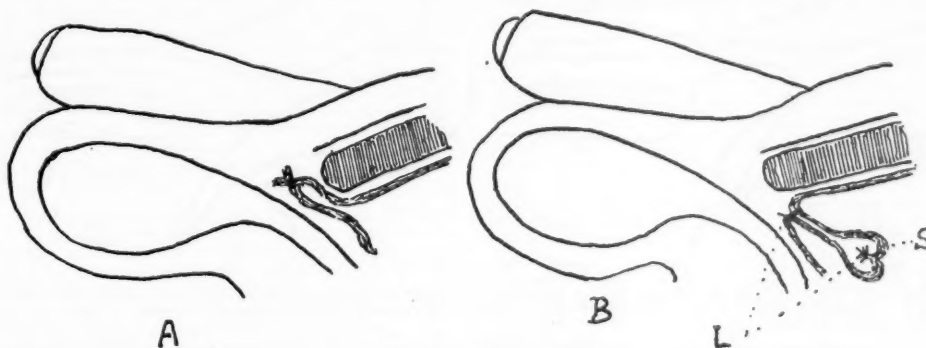


FIGURE III.

This method of inversion into the abdominal cavity was used in the first sixteen cases of the series. It is now not used unless the sac contains irreducible contents. (From *The Australian and New Zealand Journal of Surgery*—Craig, 1948.)

and muscles. The end of the sac was sewn to a hole in the end of the director and was thus made to follow the director through the muscles, inverting itself as it went. On two occasions small bowel has nearly been seriously injured by being pressed between the advancing front end of the dissector and the abdominal wall.

2. There has been one recurrence at the site at which the inverted sac was brought through the abdominal wall. Three such recurrences were reported in the previous

muscle, where it is secured by a mattress suture going through the skin as previously described (Figure II). The gap in the muscles is then sewn up.

There have been two other alterations in technique. The first has to do with the occasional attempts that were made to produce fibrosis by introducing a sclerosing agent to the site of the internal ring. As it has seemed impossible to produce any evidence to show whether this is effective or not, the procedure has been abandoned.

The other alteration in technique has to do with the period after operation at which patients rise from bed. Formerly patients were not allowed to rise for fourteen days. Since August, 1948, all patients whose condition has not required anything more than inversion of the sac have been allowed to get up on the day following operation, or within the first few days. They have then been allowed to walk about. The value of this procedure is that it makes certain that the patients use their abdominal muscles. As was stressed in the last paper, the powerful muscles arching over the region of the internal ring are probably of great value in preventing recurrences. There have been no recurrences so far amongst the patients who have risen early from bed.

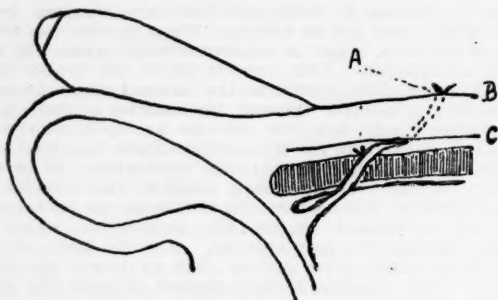


FIGURE IV.

This method of inversion was used in 114 cases. The method has now been altered to that shown in Figure II. (From *The Australian and New Zealand Journal of Surgery*—Craig, 1948.)

A Review of the Inversion Series.

The series, the analysis of which up till February, 1948, was published in the last paper, consisted of 130 operations. Up till August, 1949, there had been five recurrences—a recurrence rate of 3.8%. However, to understand the analysis properly, it is necessary to point out that the

recurrences—a recurrence rate of 2.6%. Special attention must be drawn to the anatomical sites of these three recurrences. The first, described in the last paper (Craig, 1949), was a direct recurrence and was thought to have been the result of a too enthusiastic demonstration of posterior wall with the forefinger. This, of course, should not have occurred. The second has already been described in this paper and emerged at the site of inversion. The third, which has not yet been described, was a classical indirect recurrence, the sac reproducing exactly the anatomical features of the original hernia.

The patient was a male, aged sixty-six years. The original hernia had been present for four years. At operation in July, 1946, the sac was found to admit one and a half fingers. It was inverted through the abdominal wall (Figure IV). The hernia recurred twenty-eight months later. Operation was again performed in April, 1949. The neck of the sac would barely admit the tip of the forefinger. The sac was again inverted (Figure V) and so far has not recurred.

There is no proof of the exact cause of the indirect recurrence, but it is common sense to assume that it is due to the presence of the remains of the sac or to some localized bulging of the peritoneum. In performing the inversion operation it is necessary to pull on the inverted sac with dissecting forceps at points right round its circumference to make sure inversion has been completed.

This, then, is the series as it stands at the moment. It must again be emphasized that from this series of cases only six hernias were excluded on the grounds of their being too large.

Of the 130 patients in the series, three years have elapsed since 50 were operated upon, two years since 45 were operated on, and eighteen months since 35 were operated on. To get complete results it will, of course, be necessary to follow the series for a few more years.

Comparison of this Series with a Previous Series Treated by Removal of the Sac.

In the first of these papers on hernia I published the results of a series of 154 cases in which the sac had been treated by twisting, ligation and then transplantation of the neck under the muscles. There were five indirect

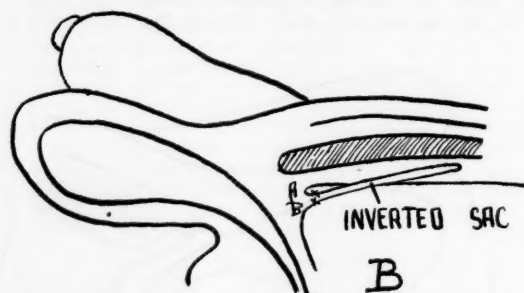
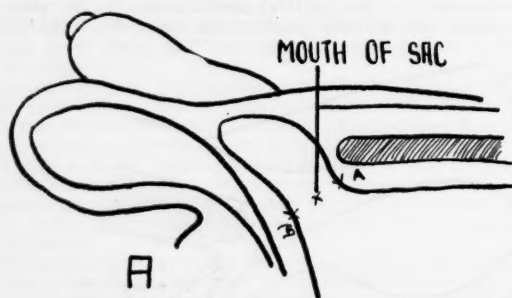


FIGURE V.

This shows how the inversion procedure draws together the separate edges of the transversalis fascia, as represented by A and B. In actual practice, after the operation, A and B are closely applied one to the other.

series should be divided into two groups. The first group consists of the first 16 patients operated upon. In these cases, the method of inversion used was that of inversion into the abdominal cavity as shown in Figure III. In this group there were two recurrences, a recurrence rate—if it is right to express so small a number as a percentage—of 12.5%. Both the recurrences in this group have been shown by operation to have been of the ordinary indirect type—that is, the recurrent sac occupied the same position as that occupied by the original sac. This method of operating has been abandoned and is used only in cases in which the sac contains irreducible contents. The second group consists of 114 patients who were operated on by the method of inversion through the abdominal wall as shown in Figure IV. In this group there have been three recur-

recurrences—a recurrence rate of 3.2%. The series of 130 patients treated by inversion of the sac can well be compared to this first series, as the time relationships of the two series are very similar; that is, they were both studied over a period of four years, and the length of time elapsing between the performance of the last operation in the series and the writing of the paper is much the same in both cases.

The recurrence rate of the 130 "inversion" series is 3.8%. It would therefore seem at first glance that there is very little difference between the two series. However, if the group formed by the first 16 cases of this series, in which an unsuitable operation was used, and in which there were two recurrences, is removed, the recurrence rate for the remaining 114 is only 2.6%. Moreover, of the three recur-

rences in this group of 114, two were of a type which it is thought can be prevented in the future. Only one was of the classical indirect type.

General Conclusion.

My own belief at the present time is that the inversion operation is a better one than that in which the sac is ligated (with or without a previous twisting). It must be again pointed out that in the ligation operation the surgeon does not really remove the neck of the sac. He relies on Nature to do this for him. Should anything go wrong with his suture, there is present the beginning of a new sac. After the inversion operation the peritoneum is left absolutely streamlined and flat. Moreover, the inversion procedure is the only method by which the separated edges of the transversalis fascia can be drawn together without the necessity of local stitching (Figure V, A and B).

Having had considerable experience with both types of treatment of the sac, I am continuing with the inversion method and am teaching this to my resident medical officers as the most suitable procedure.

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A MEDICAL ACCOUNT OF A VOYAGE ON A CONVICT VESSEL.

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A CENTURY and more ago a sea voyage, even under the best conditions, was not an undertaking to be embarked on lightly. Poorer migrants had to endure almost incredible hardships, so that an account of the conditions which existed on sailing vessels (Vogel, 1938) makes sordid reading. Men, women and children were herded together between decks under appallingly dirty conditions with little regard for modesty; the food was monotonous and defective in both quantity and quality; a green slime often coated the inside of the water casks; ventilation was utterly inadequate and many of the migrants were not very fastidious in their personal habits, so that the malodorous exhalations from a multitude of unwashed bodies and the ravages of ectoparasites added to the general unpleasantness. There is little wonder, then, that outbreaks of typhoid, typhus, smallpox and tropical fevers were not uncommon, and scurvy often occurred even though medical science had the knowledge to prevent it.

When we bear in mind that these were the conditions under which free migrants travelled, it helps us to realize what hardships felons under sentence of transportation had to suffer on the majority of convict ships; to the hardships and sufferings inseparable from a sea voyage were frequently added those inflicted on them by the callous and often sadistic conduct of their gaolers. But not all convict vessels presented a picture of unrelieved brutality, and not all those placed in charge of convicts took delight in the infliction of suffering; there were among them men who pursued a policy both enlightened and humane, who did their best to relieve the prisoners' hardships as far as it lay in their power, and who aimed to reform and rehabilitate rather than to punish.

According to Forsyth (1935), from about 1824 onwards it was the custom for criminals sentenced to transportation to be sent first to gaols or hulks in England, till a ship was ready to take them to the penal colonies of Australia. Then, when finally they embarked, they were placed under the care of a "surgeon superintendent" who was responsible on the voyage for their discipline and well-being, physical,

mental and moral, and for handing them over to the colonial authorities when they reached their destination.

It is one of these "surgeon superintendents" whom I propose to discuss, a man actuated by humanitarian motives of the highest order. It is our good fortune that he has left us an account of one of his voyages. In it we are told of the nature of his work, of the problems that confronted him and of the efforts he made to lead the convicts to a God-fearing way of living and to fit them for their life in a new land. Although my main object is to describe the medical aspects of his work, other matters occupied his attention to such an extent that to omit some mention of them would leave the picture seriously incomplete. I offer no apology, then, for the inclusion.

Dr. Browning.

Colin Arrott Browning, M.D., was a pious and conscientious man who took his duties as "surgeon superintendent" seriously and with full realization of the grave responsibilities of the position. He was zealous in the prosecution of all measures within his power for ensuring the health and physical well-being of his charges, but took even greater pains in the promotion and maintenance of their mental and spiritual welfare. To this end he established schools on board ship for the illiterate, kept a library of religious books and tracts for the edification of the convicts, and treated them to regular sermons and homilies, exhorting them to abandon their former wickedness and to turn to the paths of righteousness.

Dr. Browning's first voyage had been on His Majesty's Ship *Surrey* in 1831. Then, in 1834, he made a voyage on His Majesty's Ship *Arab*, and in 1836 on His Majesty's Ship *Elphinstone*. After these three voyages he was sufficiently satisfied with the system he had evolved to write his book for the guidance of others who might have similar duties thrust on them. This bore the title "England's Exiles, or a View of a System of Instruction and Discipline as Carried into Effect during the Voyage to the Penal Colonies of Australia", and was published at London in 1842. In it he set out in some detail an account of the voyage of *Elphinstone*, with a description of his system of organization and instruction, including almost verbatim reports of the sermons he delivered. Medical aspects of his work were dealt with in the appendix.

On *Elphinstone* Dr. Browning had 240 men and boys under his care, 160 from the hulks at Woolwich and 80 from the hulks at Chatham. All of these were examined before embarkation by Dr. Browning to see that they were fit for the voyage. Then a number was allotted to each convict, which was stamped on his mattress and carved by him on his water keg, kits and wooden platters. All knives and other cutting instruments had to be handed over to the chief mate for safe custody during the voyage after being marked with the owner's name or number.

Immediately after embarkation Dr. Browning marshalled the prisoners for the first of the many lectures they had to suffer on the trip. He explained to them the organization of the ship and what would be expected of them as regards both their work and their behaviour. In regard to the latter he seems to have expected a little too much of the unfortunate prisoners. When we consider what "tough hombres" made up his audience—murderers, highwaymen, burglars, garroters, pickpockets, smugglers and villains of every description—such exhortations as the following must raise a smile:

Let your language be always becoming and respectful, your manners most unequivocally polite, and your whole conduct in unison with the dictates of sound and enlightened reason.

No doubt the convicts heeded and behaved like perfect little gentlemen for the remainder of the voyage.

Prisoners' Duties.

To assist him to maintain discipline and to allow a closer supervision of the convicts as they went about their duties, Dr. Browning chose from among them a number whom he considered fit for a certain amount of responsibility and gave them a measure of authority over their

fellows. At the head of this hierarchy of "petty-officers", as he called them, was the "first captain", who was the head of the establishment and was responsible for the maintenance of order and for the well-being of his fellow prisoners. Next there was the "second captain", whose chief duty was to attend to those who were under punishment and to see that they received their allotted rations. Below these two there were a number of other "petty-officers", such as the "captains of divisions", the "captains of the upper deck", "captains of the men's ward" and "captains of the boys' ward". As a result of this system Dr. Browning was relieved of the necessity of supervising personally many of the petty details of the day's routine.

In addition to the "petty-officers" certain of the convicts were assigned to specific tasks. For example, cook's delegates (that is, mess orderlies) and barbers were appointed. The hospital establishment required a steward and two assistants, while a librarian was needed to look after the books and tracts.

But the feature of the organization which was Dr. Browning's chief pride was his system of schools and "schoolmasters". Twenty classes were created for convicts of varying degrees of literacy. Each class contained nine or ten pupils under the care of a "schoolmaster" chosen from among the better educated convicts. Some of the most intelligent and best educated of the convicts were appointed "inspectors of schools". It was their duty to visit the classes and report on their progress to the "surgeon-superintendent".

At the end of the voyage examinations were held, the ship's captain and chief mate being coopted as examiners. After the examinations prizes (chiefly religious books and tracts) were distributed to the successful candidates. The "surgeon-superintendent" was very gratified with the results of the examinations and the progress his charges had made under his educational programme.

Hygiene.

Although, at first, the impression may be gained that the moral uplift and educational guidance of the convicts were Dr. Browning's main concerns, it must not be thought that he neglected the medical aspects of his work. On the contrary, for those days, he seems to have had a fairly enlightened attitude towards hygiene, and its practical aspects were carried out with his usual enthusiasm. Scrupulous attention was paid to personal cleanliness, to ventilation and to fumigation. The decks were kept clean and dry. Regular inspections were made of the wards. Cleanliness in dress and person was insisted on. Times were allotted in the weekly programme for washing clothes. Ventilation was achieved by keeping the hatchways open as much as possible to allow the ingress of air and by the use of wind-sails. Chloride of lime and occasionally vinegar were used for fumigation. The prisoners were given exercise by daily marches round the deck, in addition to the exercise they received in carrying out their duties. Due consideration was given to diet, and as liberal a ration scale was laid down as circumstances allowed. In short, everything feasible within the limits of his knowledge and the circumstances of the voyage was done to maintain the convicts in health and prevent outbreaks of disease.

Diseases Encountered and the Care of the Sick.

It was one of the duties of the sick bay steward to keep a journal in which was recorded every attendance at the sick bay, even if it was only for a dose of "domestic medicine". In addition to this, all cases of any moment were entered on an official sick list, which was sent subsequently to the Physician-General of the Navy (that is, the Inspector-General of Navy Hospitals and Fleets) for his information.

As in any community living under adverse conditions, it was found that the diseases met with were of diverse nature. It was found, too, that the types of diseases which occurred differed at different stages of the voyage. In the early part of the trip, in the bleak northern waters, winter ills such as catarrh, sore throat and ophthalmia were

responsible for the bulk of the sick-bay attendances. In the tropics, on the other hand, the hospital staff were called on to treat "affections of the head", "derangements of the biliary system" and a few cases of scurvy. From the Cape of Good Hope to Van Diemen's Land rheumatic ailments, sore throat, pneumonia and bowel disorders were responsible for most of the entries in the sick-bay journal.

As was almost inevitable on a convict transport, there were several deaths on the voyage. One of the prisoners died of "apoplexy" which was thought to be the late result of a blow on the head received while he was confined on the hulks awaiting transportation. Another died of "water on the chest", said to be the result of an attack of pneumonia which had developed before he left England while he was working in a sewer during inclement weather. An infant belonging to one of the guard died of hydrocephalus, while the ship's cook succumbed to hydrothorax and general dropsy. Another fatality was the death of a private of the guard, who died from an "organic affection of the stomach" which was attributed to "the intemperate habits of a confirmed drunkard".

Scurvy.

A few cases of scurvy were met with on the voyage, and Dr. Browning discussed the pathological, clinical and therapeutic aspects of the disease at some length, thus giving us an excellent opportunity of comparing the state of knowledge of the disease as it was then with the understanding of it we have today. I propose, therefore, to devote some space to Dr. Browning's observations on scurvy and his views concerning its nature, and to summarize briefly our modern concepts of it.

In the first place, some idea of his conception of the pathology of scurvy can be gained from his description of an autopsy in a case of what he described as "scurvy". The patient was a youth who had suffered from diarrhoea and a slight cough on the voyage and had died after the vessel had reached Van Diemen's Land. This was in keeping with the experience of the colonial surgeons present at the autopsy, who told Dr. Browning that it was fairly common for prisoners to succumb to the condition after the vessel had reached port, even though there had been little evidence of it on the voyage. The autopsy in Dr. Browning's case revealed extensive ulceration of the intestine and a mass of tubercles in the right lung. This, to my mind, is scarcely a convincing picture of scurvy; but of course there may have been other findings which were omitted from the description. On the other hand, his description of the clinical features of the disease is fairly satisfactory. It reads as follows:

Scurvy is a disease which appears to attack all the tissues. The earliest symptoms may appear in the gums, skin or cellular substance; in the gums in the form of sponginess and readiness to bleed; in the skin in the resemblance to the common flea bite but wanting the puncture in the centre; in the cellular substance in the yellowish or purplish oedematous effusions or ecchymoses, hardness and increased heat, often attended with contraction of tendons and stiffness of joints. Or its earliest manifestations may be in one of the internal organs as the lungs, stomach or bowels—most frequently it would seem in the lungs or intestines; in the latter consisting chiefly of an ulceration commencing in the mucous membrane and a species of venous congestion which marks great laxity of the solids, sometimes attended with debility of the whole system. When the external parts are first assailed the internal organs are the more likely, at least for a time, to escape. When the internal organs are, on the other hand, in the first instance attacked, the disease may have most serious, if not fatal progress, before any outward manifestations or symptoms of its presence have excited any apprehensions in the minds of the medical attendants. A slight cough or diarrhoea may be the first intimation of the existence of a disease, which, before its detection, may have wrought fearful and fatal havoc and thus made sure of its victim.

The treatment which Dr. Browning favoured was the administration of a mixture containing potassium nitrate, a liberal amount of lemon juice or lemon juice and vinegar, spirits and several drops of oil of peppermint.

Turning to the present day, we find that the chief advances in our knowledge of the disease have been the identification of ascorbic acid as the antiscorbutic principle of citrus fruits, and the realization that the manifold manifestations of the disease result from the breakdown of a single mechanism. They result from the failure of the supporting tissues to manufacture intercellular substances in the absence of the antiscorbutic principle. In consequence there is a deficiency of the collagen of fibrous tissue, the matrix of bone and cartilage and non-epithelial cement substance. From this there arises the marked tendency to hæmorrhage from the weakened and unsupported capillary walls.

The End of the Voyage.

After he had arrived at Van Diemen's Land and handed the convicts over to the colonial authorities, Dr. Browning's responsibilities were at an end. But, before this account of his voyage is concluded, it is fitting to remark that in the midst of the brutality and inhumanity which characterized that unhappy phase of our history, Dr. Browning's humane and enlightened administration stands in pleasing contrast. Although his sermons and exhortations sound stilted and pompous to us, we can have nothing but admiration for the ideals by which he lived. For in the most unregenerate of his charges he saw, not a mere criminal to be punished and ground down, but a human soul worthy of salvation; and in the lowest and most depraved among them he saw, not some subhuman member of the brute creation, but a fellow mortal who had fallen by the wayside and needed a helping hand. As a result of this attitude of mind his whole administration was directed, not towards humiliation and punishment of the convicts for their crimes, but towards showing them the way to a new and happier life.

Acknowledgements.

My thanks are due to Dr. A. J. Metcalfe, Director-General of Health, Canberra, for permission to publish this article, and to Professor E. Ford, Director of the School of Public Health and Tropical Medicine, Sydney, who suggested the subject of this article, and who has assisted me throughout with helpful criticism.

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SOME ASPECTS OF HEALING.¹

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It is probably true that good health automatically follows the normal functioning of body and mind. As a general rule we are unconscious of good health and become aware of it only after a period of ill health. Disturbance of bodily and mental function, beyond one's particular threshold, gives rise to a state of uneasy consciousness which we interpret as illness.

Healing is the art or skill of making sick people well, of making them whole and sound again, of freeing them from pain, sickness or disease and re-creating a state of well-being, clear thinking and peace of mind. The healing of physical illness has become much easier with the advances in medical science over the past twenty or thirty years, but with respect to those persons whose illness of body is associated with psychic upset, or to those in whom the bias of illness lies in the mind, healing is still a

difficult art. It is with latter aspect of healing that the present talk is more especially concerned.

Illness often makes a deeper wound in the personality than is apparent from the physical scar, and may make subtle inroads into confidence and capacity. Healing has to add something to diagnosis and therapies and has to deal with these psychic wounds which the illness has also inflicted.

The initial contact with the patient is of importance. He comes to you not only in distress of body and mind, hoping for help, but often with doubt or even suspicion of your ability to help him. It is your handling of this first contact that frequently decides your chance of helping him. You must not only impress him with your capacity to carry out a thorough examination and to grasp swiftly the essentials of the case, but you early have to make some contact with him as a person; you have to touch him, as it were, with friendliness, and you must sustain this contact and understanding throughout the management of his illness. Also, it is well to bear in mind that the patient is not the only one under observation. You, too, are under the close scrutiny of the patient; he is watching your every movement and analysing every change of facial expression. One has to mask one's feeling and try to preserve an imperturbable countenance while marshalling the relevant facts of the case. Frequently the patient's anxious, helpless expression matches your own feeling about his case, and it is then that you need all the help that training and long habit can give to switch on that obstinate force that lights within you the determination and power to help him. This personal contact made early in your association with the patient can develop into a bridge over which you may convey the forces which will give him strength and eventually health. It is wise not to make up your mind too soon, even in cases in which the solution seems quite obvious; delay judgement and keep probing; the deeper causes of his illness are frequently hidden under a smokescreen of superficial symptoms. When we are faced with a patient whose condition seems hopelessly difficult, again reserve judgement, again keep probing and poking with a sort of dogged hopefulness. Insight often comes to you just at the point at which you would have given in.

When we consider the powerful weapons of therapeutic attack which have been added to our medical armoury in latter years, our hand is further strengthened in assuming that there are few patients who cannot be helped.

Faith in one's ability to heal, even unbacked by scientific knowledge, is sometimes sufficient in itself to cure many ills. The Christian Scientist practitioner, the chiropractor, the naturopath, the herbalist, have one quality in common—namely, a faith in their own power to heal the sick—and they are able in their own way to transfer some of this faith and hope of "wellness" into the patient's mind. In many cases it seems sufficient for the patient only to see this vision of "wellness" for the process of recovery to be initiated.

I feel that healing, as such, has gradually slipped away from the medical profession, which has been more concerned with the elucidation and diagnosis and treatment of the physical side of disease. But many ills have no physical cause, and many physical ills have a psychic element which needs help. Medicine has, until recently, turned away from these and taken refuge in the physical, and the quack with his healing intuition and armed only with his faith has, with some success, entered this neglected field. What a wonderful position we would be in if we could combine the faith and zeal of the Christian Science practitioner with the medical certainty that modern diagnosis and understanding of illness can give! However, this healing skill, like other skills, has to be developed. Some doctors seem to have a natural bent for it, but most of us have to develop it more or less consciously.

It may help us to try to imagine a more dynamic conception of health and illness: that a spring or stream of vital energy is continually being created within us, which in health wells up and spreads its life-giving force into every part of our being; that in illness this spring of "wellness" becomes covered over or muddled by the products of physical dysfunction or disease, or drained

¹ President's address, delivered at the annual meeting of the Section of Neurology and Psychiatry, New South Wales Branch of the British Medical Association, on November 25, 1949.

away by misuse of mind; that healing consists in clearing away the debris which is covering over this spring of "wellness" and in stopping up the cracks through which it is seeping away. Once the evil forces which have been poisoning the patient's body and mind have been removed, this spring of "wellness" will again fill itself and overflow into the parched recesses of his being. We should think of this potentiality of "wellness" existing even in the sickest person. One must first be a good physician to understand and deal with the physical ills which may beset the patient, a good psychiatrist to understand and untangle the forces of his mind, and a good healer to regather his scattered forces into a healthy functionary whole. At the same time as one begins to uncover the physical and mental influences which are making the person ill, and even before one sees a way out of his illness, healing must begin. The doctor must try to get a prevision of his patient's "wellness", he must be able to feel it himself and to have the power to transmit this vision of "wellness" to his patient. He must be able, by direct suggestion or subtle innuendo, to insinuate the possibility of recovery into the patient's mind. Once even the possibility of recovery is placed deeply enough in a sick person's mind, it seems to start a trickle which eventually and almost automatically sweeps the patient to recovery.

When a patient's powers of concentration and attention are so scattered that he cannot hold them together long enough to absorb any outward suggestion at all, other methods such as the administration of sedatives, hypnosis or even shock treatment have to be used temporarily to bring them together, to create a reasonable peace of mind, to hold them together long enough to make a significant impression on the patient's mind. The battle must eventually be fought at the conscious level, issues must be faced and attitudes changed; one is therefore suspicious of methods which cloud consciousness or in which we delegate our authority to some physical instrument, except as temporary sustaining or life-saving devices. We have to paint the picture of good health in the patient's mind, and it has to be made desirable and possible. The most powerful and lasting force for any suggestion is that which is clothed with the full conscious desire of the whole of our being. Also, we must remember that we have serious competition from inertia and laziness, alcohol, greed, envy, selfishness, hate and guilt. It needs all our wit and ingenuity to implant an ideal of health in the patient's mind and to help him defend it against all assaults. We should try to marshal the patient's own innate forces and potentialities in such a way that the path to good health becomes insistently and unavoidably obvious to him, rather than to force upon him positive suggestions which may be really contrary to his real wishes and hence doomed to failure.

Each of us must develop methods which are suitable to his own particular personality and knowledge. I will mention two unusual men and their methods of healing which may be of interest. The first, George Groddeck (1866 to 1934) was a contemporary of Freud, and in fact claims that his conception of the unconscious "it" preceded Freud's "id". He practised a form of healing which was a combination of massage and psychotherapy, in which "the pain he inflicted must have played some part in the cure, for in self-protection they developed the will to live, while the searching questions he put in analysis often touched them on the raw and they revealed to him all sorts of knowledge helpful to the treatment . . . Yet the real essence of Groddeck's treatment was his silent presence." Keyserling said of him:

He is indeed the only man I have known who continually reminded me of Lao-tse: his non-action had the same magical effect. He took the view that the Doctor really knows nothing, and of himself can do nothing, that he should therefore interfere as little as possible, for his very presence can provoke to action the patient's own "power of healing". . . . Those who were already mortally ill he would revive with his own courage, and side by side with them would battle death to the very last moment. From his university days he had taken the view that disease was the result, not of a single local cause, but of the patient's whole manner

of living and attitude to life, and had preached a doctrine that the relationship of doctor to patient, patient to doctor, counted more than any other factor in the treatment of disease. . . . In place of the masterful, compelling force he had previously brought to bear upon his patients he now disciplined himself to the untiring observation of their spontaneous activities, with which he interfered as little as possible. In this way he learned to feel himself into the patient's situation and to look at life through their eyes. By this self-immolation, this submerging of himself into the mind of another, he was able, in a surprising number of cases, to touch some key to the focus of life and to cure many who had been ill so long that they had come to him in despair rather than in hope. . . . As a physician who burst like a storm into the souls of men penetrating into the depths where all life is one, all boundaries are broken down and body and mind are fused together.

Then as a true creator in the dark realm of the "it", Groddeck "shaped new life and new forms", and lastly, "at the end of his life he was still curing patients by taking an interest in them and talking with them".

We cannot all hope to be George Groddeck, but we can try to absorb some of his intense faith in the strength of the fundamental life force, if given a chance, to sweep a patient to recovery. We, as healers, have to find a way to give it that chance.

The second man is Haydn Brown, who in 1918 wrote a book "Advanced Suggestion" or as he termed it, "Neuro-induction". In it he describes a method of giving suggestion in a manner akin to hypnosis, with the difference that the patient retains his full consciousness and is helped to visualize vividly the healthful effect of body or mind desired. The patient is induced or inducted or led into a state of complete physical and mental relaxation by the doctor with the help of suggestion, and also by the use of manipulation. This helps by limiting external distractions and by holding the forces of the mind to create a sort of superconsciousness in which suggestion is quickly and easily rooted. The pin-pointing of all our mental energies thus on a particular task surely must hold great possibilities for successful therapy.

Sister Elizabeth Kenny introduced a similar principle into her reeducation of muscles, in which outside stimuli were eliminated by quietness and proper colour schemes, and in which the limb or joint was oriented in space by the contact of the masseuse's hands, and then the patient was encouraged, I think with closed eyes, to picture intensely the particular movement concerned. If no movement was possible the masseuse gently and slowly moved the joint during the period of visualization of the movement. This to my mind constituted an advance on the accepted methods of muscle reeducation employed by masseuses at that time, in which such concentration of mental energy was not demanded.

Jacob H. Conn, in *The Journal of Nervous and Mental Disease* for January, 1949, uses a similar technique to that of Haydn Brown; in this a trance state is induced, but the patient retains conscious control and participates in his own treatment as a creative, unifying, inter-personal experience. This Conn terms "hypnosynthesis"; it is a form of dynamic psychotherapy as opposed to a static psychotherapy such as hypnotic suggestion.

When I tried to set down what my own methods were, a disconcerting vagueness came over my mind and I was doubtful whether much good would be served by proceeding any further. However, once I had started there seemed no escape, so diffidently I put down some of my own thoughts on the subject. It should be needless to mention the necessity of taking a good history; but especially should one trace with care that period when the patient was changing from a normally functioning person into a sick one. When one has achieved a proper contact with the patient's mind—that is, a contact which is free of resistances, of criticisms and of judgements—when there exists a complete acceptance, as it were, of each other, then the evidence accumulated may be turned over to one's subconscious mind, there to mix with one's accumulated knowledge and experience till it fits into a pattern

which gives one the clue to or insight into the patient's illness.

I feel that it is just vanity to think that we can consciously solve anything very difficult; we seem to have to gather the facts patiently and humbly present them to our subconscious mind for elucidation. One is always impatient to pronounce judgement on a patient; try simply to keep your mind open to what the patient is telling you, or will tell you if given the proper stimulus. Let the evidence pour into your mind without prejudice and the solution will eventually come to you.

Most people work out a reasonable compromise with physical disability, but nervous illness is a different kettle of fish. Stored in our subconscious minds are the memories of our disappointments, our fears, our hates, together with the vestigial memories of racial fears and catastrophes. These blend into a subconscious sentiment or "cenesthesia" as Blondel called it. It is this disturbing sentiment which seems to rise to consciousness when nervous control is diminished, and constitutes the feelings or symptoms of nervous illness.

It is often difficult to maintain one's inner composure or outward control when assaulted by such a disturbing influence, and one can always feel hopeful about a person who has maintained such a composure and who has carried on his life in a normal manner in spite of such a feeling. However upsetting and disturbing this nervous feeling may be, what really matters is how the person has reacted to it, how much conscious agitation he has added to it and to what extent it has damaged his inner ideal of himself and altered his capacity for normal living. These constitute the real illness and must be measured. Apart from an attempt to find out the factors which have helped to cause the illness, and the pointing out of faults of living and thinking, other help has to be given to the patient. You should, from the start, try to give him reasonable peace of mind by explanation, by reassurance and if possible by sufficient and proper sedation. A mixture of bromide and phenobarbital is helpful in mild cases, but when the agitation is severe, tincture of opium is still a good medicine, and can be given for three or four weeks without any danger. If sedation does not touch the condition in three or four weeks, it probably will be of no help, and other more powerful methods of achieving peace of mind, such as subcoma insulin therapy or electroconvulsive therapy, can be considered; but if you can give a patient peace of mind for three or four weeks, he probably will then be well on the way to recovery. The relief of distressing symptoms is most necessary; it gives the patient something to hang on to and is itself a powerful suggestive force. It is also necessary to help the patient to make some compromise with his symptoms—to help him realize that they are only distorted feelings and comparable, say, to the heartburn of indigestion; to point out that he can react to them in two different ways—namely with panic, depression or agitation, which may "step them up" to a catastrophic level, or with relative indifference. He should try to meet this nervous, uneasy feeling with an attitude of passive non-resistance, and if he does he will find that it will soon subside and sink back out of his mind. He should also be encouraged to try to live as normal a life as possible, in spite of feeling disturbed. If a patient can learn to preserve even a small corner of detached calmness in his mind under these circumstances, that patient will ultimately get well. We, as healers, have somehow to inculcate such an attitude into the minds of our patients.

I try not to mislead a patient or to promise too much, but rather to paint a picture of gradual improvement that, if continued, will eventually lead to success. I like to feel that the gradual nibbling away of the physical or psychic foundations of the illness will sooner or later cause it to disintegrate and scatter.

The following thoughts, the truth of which I feel is right, help to sustain me when the going is "tough": that the strength of man's body and mind is limitless and that there is no illness so hopeless that it will not respond to your continued enthusiasm, hope and doggedness; that the human mind is not so fixed or rigid as would appear,

but is capable of any change at any time if we can only provide the proper stimulus. It should be our endeavour, every time we visit a patient, to try to leave him vibrating with an inner glow of hope and with some vision of "wellness", and always to be trying, seeking and probing to "touch off" that power within the patient which will sweep him upward to recovery.

In conclusion, we should endeavour to keep our minds fixed on what should be our main purpose in life—namely, the development of our healing powers, which, although they include skill in diagnosis and treatment, also transcend both. We should determine early in our careers to develop that knowledge of illness and insight into human nature and into ourselves which will enable us to be, not only efficient doctors, but also good healers of men.

Reports of Cases.

A REPORT ON TWO CASES OF SULPHONAMIDE ANURIA AND SUGGESTED TREATMENT.

By W. J. SLEEMAN, M.B., B.S.,
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Case I.

Mr. D.M., aged twenty-one years, single, was admitted to hospital on February 9, 1949, with extreme dysuria and lower abdominal pain. He had for the previous seven days been under treatment for a urethral discharge. Three days before his admission to hospital he had started a course of sulphamerazine, and had taken 15 grammes in twenty-four hours. The night before his admission to hospital, the abdominal pain was severe, and on passing urine he noticed extreme scalding and urethral discharge. On the morning of his admission to hospital he had severe suprapubic pain and strangury. He was passing blood *per urethram*, and the urine was "dirty". He had felt ill all day, and had vomited six times. He had had no rigors, and the urinary output had been small throughout the day. The provisional diagnosis was non-specific urethritis, and possibly sulphonamide oliguria.

Examination revealed the patient to be a rather pale young man, with a regular pulse of good volume, and a blood pressure of 120 millimetres of mercury, systolic, and 80 millimetres, diastolic. His tongue was coated and his breath unpleasant. There were no signs of ulceration in the throat or mouth. The skin was rather clammy, and examination of the abdomen revealed a site of maximum tenderness two inches above the pubis. There was a slight white discharge from the penile urethra, and rectal examination revealed a moderately enlarged prostate, painful on massage, which produced a small amount of discharge.

The immediate treatment was rest in bed, the administration of the ward diet, and an intake of five pints of fluid with *Mistura Potassii Citratiss*, half an ounce every four hours. A fluid chart was kept. During the night the vomiting continued, and the urinary output for the twenty-four hours was half an ounce of blood-stained fluid. The blood urea content at this stage was 70 milligrammes *per centum*, and a blood count revealed 23,000 leucocytes *per cubic millimetre*.

A cystoscopic examination was then made, and ureteric catheterization was attempted. This failed. Intravenous therapy was commenced, 4% and 25% dextrose solution and 4.285% sodium sulphate solution being given alternately. He was also given intravenously 10 millilitres of sodium lactate solution and sodium bicarbonate solution on three occasions. A Wangenstein suction tube was inserted. That evening, he still passed a negligible amount of urine.

The following day his general condition had deteriorated noticeably. The blood urea level had risen to 90 milligrammes *per centum* and a further ureteric catheterization

was attempted. The catheters were passed one centimetre on the right side and two centimetres on the left side, where they were blocked by an obstruction.

The patient continued to vomit, and his general condition indicated more radical treatment. During the ensuing twenty-four hours, excretion of urine was low, and a nephrostomy was considered the best treatment.

On the fourth day after his admission to hospital, a left-sided ureterostomy was performed, and a ureteric catheter was passed 16 centimetres towards the bladder. A size eight catheter was passed into the kidney pelvis, a distance of about two inches. About 20 millilitres of murky, blood-stained urine escaped under tension. Post-operatively, the ureteric catheter was irrigated every two hours, and the catheter to the kidney every two hours, sterile sodium bicarbonate solution being used. During the night the patient passed 25 ounces of urine, examination of the specimens showing progressive diminution in the amount of haematuria.

During the next three days passage of urine from the left kidney was fairly satisfactory, although the patient continued to become more drowsy; however, the breath became less uræmic. Summing up his condition at that stage warranted a right-sided nephrostomy, which was performed eight days after his admission to hospital. In spite of these measures, the right kidney did not start to secrete for a further eleven days; that is, no urine was secreted from the right kidney for an absolute total of fifteen days.

However, the patient's condition remained serious, owing to superadded pyelitis. A blood transfusion of one pint was given fifteen days after his admission to hospital, and a further two pints were given on the nineteenth day, the intravenous therapy then being discontinued.

From then onwards the patient's condition continued to improve daily, and the remainder of his convalescence was straightforward, apart from somewhat persistent pyelitis; however, this was cleared up by a course of streptomycin. The catheters were removed from the kidneys and the ureters three weeks after his admission to hospital.

Case II.

Mrs. D.E., aged fifty-five years, was admitted to hospital on April 26, 1949, with a one week's history of coughs, sputum and chest pain, for which she took sulphamerazine; she had, during the last two days, taken 24 grammes. Her chest symptoms abated and she began to complain of pain in the left side of the abdomen. On her admission to hospital, she was vomiting and generally felt ill, but at this stage she had no urinary symptoms.

Examination revealed the patient to be an obese woman in no distress. Her tongue was coated and her breath unpleasant. Tenderness was present in the hypogastrium, and the renal angles were clear. Examination of her urine revealed much blood and a few well-formed sulphamide crystals. The blood urea content was 64 milligrammes per centum.

During the first thirty-six hours after her admission to hospital only three ounces of dark, "dirty", blood-stained urine were passed. The vomiting increased, and at this stage intravenous therapy was commenced; 10 millilitres of sodium bicarbonate solution and 10 millilitres of sodium lactate solution were given, and penicillin therapy was commenced. For the following forty-eight hours her fluid intake grossly exceeded her output, and overflowing of the circulation became evident. Vomiting increased, the patient became uræmic, and her urinary output of five millilitres consisted of practically pure blood. A cystoscopic examination was made, and both ureters were easily catheterized. From the second to the fourth day, pelvic lavage through the catheters was carried out, and her fluid intake was restricted to two pints daily. On the fourth day after her admission to hospital the ureteric catheters were removed, and the patient immediately passed 20 ounces of blood-stained fluid.

On the following day her urinary output was 50 ounces, and the fluid was less blood stained. At this stage her fluid intake was increased to four pints per day, and from then until her discharge from hospital seven days later,

her recovery was uneventful. She was discharged from hospital, well, passing clear urine and having a blood urea content of 32 milligrammes per centum, eleven days after her admission to hospital.

Discussion.

Presented here are two somewhat unusual cases of sulphonamide anuria; both of them were due to the same drug, sulphamerazine, large quantities being taken over a short period of time.

Fields, Martin and others in America regard anuria as representing a urinary output of 50 millilitres or less during twenty-four hours, and oliguria as representing an output between 50 and 100 millilitres in twenty-four hours. At the Royal Hobart Hospital the definition is more radical. We regard anuria as representing practically complete cessation of kidney function, and oliguria as representing the secretion of only as much as 50 millilitres of urine in twenty-four hours.

In these two cases the effects upon the kidney function differ remarkably. Although somewhat similar cases have been reported from time to time, it is thought that these two cases still warrant publication, as the various forms of treatment, many as they are, cannot be stereotyped for any particular case. When post-mortem examinations have been performed in these cases, the pathological changes found in the kidneys have been variable. As we are dealing only with sulphonamide anuria, it seems to be generally accepted that the glomerulus of the kidney remains unaffected, and that the damage is in the lower nephron.

The main aim of this article is to try to arrive at some definite conclusions as to the immediate and later treatment of sulphonamide anuria. "To push the fluids is to sound the death knoll of the anuric patient" is true at the onset of the patient's illness; and yet a certain fluid intake must be maintained for body needs. Again, it is postulated and possibly accepted that the anuric patient does not die from uræmia, but from the pulmonary oedema due to excessive oral and parenteral fluid intake during the early course of his illness.

Since the first patient was treated, the following scheme has been worked out.

1. As oliguria and anuria develop, reasonable quantities of fluid should be given, mainly to maintain body needs. This may contain alkali, with good effect. At this stage, diuretics are to be avoided. If, on this low intake, the patient's urinary output increases and his symptoms decrease, then the intake can be increased with caution. However, if the patient's output remains small or decreases, then it would seem necessary to watch with extreme care the amount of fluid administered. For this reason, probably no more than 1500 millilitres of fluid should be given.

2. A cystoscopic examination should be performed, to try to ascertain if possible the site at which the obstruction is present. With this information, subsequent treatment can be more effectively administered. However, if the patient's condition continues to deteriorate, then further more drastic treatment is necessary, according to the pathological changes found at cystoscopy. This treatment may be (a) renal decapsulation, (b) intraperitoneal dialysis, and (c) nephrostomy. Renal decapsulation is probably used less frequently than any of the other methods. Here, the mechanism seems to be that the swollen, congested kidney is allowed by decapsulation to expand further, tension in the kidney tubules being relieved sufficiently to allow the precipitated crystals to be washed away. Whether this mechanism is correct or not is open to doubt. Peritoneal dialysis, although not removing the immediate cause of the anuria—that is, the blocked tubules—presents a method whereby nitrogenous wastes are removed from the body most satisfactorily. Uræmia itself is alleviated. In Case I nephrostomy was the method of choice, because it was thought after examination that the anuria of both sides was due to blockage of the ureter, and not to precipitation of crystals in the tubules of the kidney itself. Once nephrostomy has been established, both the ureter and the kidney pelvis can

then be irrigated with such fluid as one wishes to use; the best possibly contains alkali.

3. If the patient's condition continues to deteriorate, then treatment must be instituted to remove the increasing quantity of nitrogenous wastes from the body. This may be by peritoneal dialysis. Such methods have been extensively used in the United States, and with much success, large quantities of urea being removed in twenty-four hours.

4. The artificial kidney has also been used with success, but this method requires expert handling and constant attention.

5. Removal of nitrogenous wastes in any amount from the bowel by irrigation has to date proved impracticable.

In Case I the patient was oliguric for four days before operative interference was undertaken, and it would seem that the right kidney did not start to secrete any quantity of urine for fifteen days, and very little for nineteen days. However, before this patient was discharged from hospital, in spite of such a long period of absolute anuria and oliguria, investigation of kidney function on each side showed that at the most there was an impairment of 10%.

Summary.

Two cases of sulphonamide anuria are reported, sulphamerazine being the aetiological agent. From the pathological changes seen in these two cases, it would appear that a cystoscopic examination should be made first, and early investigation carried out, for if the ureter is obstructed, presumably with sulphonamide crystals, then this obstruction must surely be removed. It would appear in such cases as these that peritoneal dialysis is not the best form of treatment in the early stages. However, if ureteric catheters can be passed readily to the kidney pelvis and yet the patient remains anuric, then other methods or peritoneal dialysis can be instituted.

Acknowledgements.

In conclusion, I should like to thank Dr. T. Giblin and Dr. J. C. Laver for permission to publish these cases.

Reviews.

A YEAR BOOK OF SURGERY.

It is pointed out by the editor of "The 1949 Year Book of Surgery", Everts A. Graham, that the continued trend of surgical progress in recent years can be observed in the literature, which is concerned less with descriptions of new operations and more with the study of the fundamental effects of accepted surgical procedures on the various physiological processes of the body.¹ This is reflected in the material making up the Year Book, which is abstracted from journals received by the editor during the period from August, 1948, to July, 1949. The first fifty pages are taken up with sections on blood volume and shock, nutrition and electrolytes, and "general topics" all in line with the present trend, and then follow important sections on anaesthesia, chemotherapy and antibiotics, wound healing and neoplasm. The literature covered in these sections contains a great deal that was until recently either not known or not appreciated; because of it striking advances in surgery have been possible quite apart from developments in actual operative technique. The remainder of the material in the Year Book is grouped on an anatomical basis, except for a short concluding section on "armamentarium". In certain sections, notably those on the lung, the heart and the blood vessels, advances in operative technique are very obvious, but many of these, like the more radical procedures advocated for malignant disease, could have been devised by the older surgeons; it is the newer basic knowledge which has made them practicable. Papers from a wide range of journals have been selected, including four by Melbourne authors, namely, A. E. Coates, E. E. Dunlop, S. Sunderland and M. Kelly, and I. J. Wood, R. K.

¹ "The 1949 Year Book of General Surgery (August, 1948-July, 1949)", edited by Everts A. Graham, A.B., M.D.; 1949. Chicago: The Year Book Publishers, Incorporated. 7" x 5", pp. 710, with 216 illustrations. Price: \$4.75.

Doig, R. Motteram and A. Hughes. Editorial comments are rare and brief; that on page 453, couched in what is presumably baseball jargon, will be intelligible to only a limited number of people outside North America. It is not possible to indicate in more detail the subjects covered in this Year Book, but all who practise surgery or are associated with surgeons in their work will find much in it that is of interest and value.

A YEAR BOOK OF EYE, EAR, NOSE AND THROAT.

THE editing of the section on the eye in "The 1949 Year Book of Eye, Ear, Nose and Throat" has been taken over by Derrick Vail, owing to the death early in 1949 of the previous editor, Louis Bothman, who had been associated with the Year Book since 1932; the new editor has discontinued the editorial article on a special ophthalmic subject which Bothman was in the habit of contributing to each Year Book. The section on the ear, nose and throat continues under its previous editors. Journals received by the editors in the period from August, 1948, to October, 1949, have been reviewed in the selection of material included in the Year Book; they come from many parts of the world and range well outside the field of specialized journals. The subject matter of the section on the eye is grouped on a conventional anatomical basis with separate treatment of glaucoma, refraction and motility, neurology and visual fields, therapy, surgery and miscellaneous material. The subdivisions in the section on the ear relate to hearing and injuries to hearing function, the outer and middle ear, otosclerosis and the fenestration operation, and the inner ear, the eighth nerve and its connexions. The section on the nose and throat has a variety of abstracts grouped under the heading of general considerations and the rest of the arrangement is anatomical. The editor of the ear, nose and throat sections contributes a short article on poliomyelitis and tonsillectomy, in which he reviews recent findings and views on the mode of spread of poliomyelitis and expresses the opinion that in the present state of our knowledge, "we should always be conservative and never subject a child to the risk of bulbar paralysis, or other intracranial complications, by removing his tonsils and adenoids when he has an acute cold or when poliomyelitis is prevalent". Abstracts are also included of two papers on this subject, one supporting, the other failing to support the presence of a significant relationship between operation and infection. These and a good deal of other material make this Year Book worthy of at least the perusal of others besides the eye and ear, nose and throat specialists to whom it is of primary importance.

THE NURSE IN INDUSTRY.

NEARLY nine years have passed since "A Handbook for Industrial Nurses" by Marion M. West was first published.² The second edition is twice as large as the earlier, and embodies the experiences gained during the recent war. The contents have to a large extent been revised and rearranged; for this work the writer secured the collaboration of Mrs. V. Bowerman and Dr. H. F. Chard.

In Britain, the Factories (Medical and Welfare Services) Order, 1940, resulted in an appreciable increase in medical and nursing services in industry. Although by the end of 1946 there were about 4000 nurses, compared with more than twice that number in 1943, it is stated that industrial nursing has become a firmly established branch of the profession. In Australia, also, nurses of recent years have been taking an increasing interest in this type of work, and today there is an appreciable number of nurses so employed. The opening chapter, which is a brief historical review of the growth of industrial medicine and nursing, is followed by a section on legislation. The main provisions of *The Factories Act* (of Britain) and of Orders made under the Act, relating to health and welfare, are discussed, after which comes an abstract of the Act itself. A chapter is then

¹ "The 1949 Year Book of the Eye, Ear, Nose and Throat": The Eye, edited by Derrick Vail, M.D., D.Oph. (Oxon.), F.A.C.S.; The Ear, Nose and Throat, edited by Samuel J. Crowe, M.D., with the collaboration of Elmer W. Hagens, M.D.; 1949. Chicago: The Year Book Publishers, Incorporated. 7" x 5", pp. 584, with 125 illustrations. Price: \$5.00.

² "A Handbook for Industrial Nurses", by Marion M. West, S.R.N., S.C.M., with contributions by Valerie Bowerman, S.R.N., and H. F. Chard, M.B., B.S., D.O.M.S., D.I.H.; Second Edition; 1949. London: Edward Arnold and Company. 7½" x 5", pp. 276. Price: 9s.

devoted to the functions of the various authorities concerned in the administration of *The Factories Act*, and other legislation affecting employment.

In the section which deals with the qualifications of the nurse in industry, the recommendations of the Royal College of Nursing concerning salary, status and conditions of employment are shown in full.

Next, the duties and responsibilities of the nurse are set out, and this chapter is followed by one on the general organization of the factory "health department", the latter being considered the most suitable title.

The chapter on records may appear to be unnecessarily long, but serves to illustrate the need for an adequate and standardized system of health record-keeping for statistical purposes.

Chiefly for the benefit of nurses who have no direct medical supervision there is a chapter on treatment, conditions due to work as well as non-industrial disorders being considered. Brief notes for the management of a number of common ailments are given.

Dr. Chard's contribution on eye hazards is designed "to show how far the industrial nurse can go in treating eye injuries, and in particular, to point out the many difficulties with which she should be familiar". As these injuries are common, this chapter is an asset: it presents good reasons why none but properly trained and responsible individuals should treat eye conditions.

The final chapter in which the coordination of various health and welfare services in the United Kingdom is discussed is followed by an appendix relating to *The Factories Act*, 1948.

Although this book has been prepared primarily for the industrial nurse in Britain, no part of it should fail to interest nurses in this country, and much of it should be of considerable practical benefit to them.

PERSONALITY MALADJUSTMENTS AND MENTAL HYGIENE.

J. E. WALLACE WALLIN, Ph.D., has succeeded in producing a very useful text-book for students of mental hygiene, psychology, education, sociology and counselling.¹ There is an extensive bibliography set out according to subject matter; the index is comprehensive. There are seventeen chapters covering nearly six hundred pages. The book is mainly descriptive and contains innumerable case histories to exemplify the conditions described. In most cases the actual words of the patient are used. Among the more noteworthy pathological states described are mob epidemics, criminal epidemics, and "blame" defence mechanisms. There is a chapter devoted to mental conflicts which is brief and concise, and probably covers the subject comprehensively enough for a book of this nature. The same remarks apply to the chapter dealing with mental dissociations. Both contain illustrative examples in the form of case histories. The author discusses the limitations of psychotherapy, stressing the need for the adoption of the appropriate type and technique after consultation. A comprehensive list of forms of psychotherapy from the simplest to the most involved is set out. The motives and dangers of rationalization are discussed. Sound suggestions for the religious instruction of children up to the age of ten years are given, but one would prefer that more should have been written of the value of religion in the prophylaxis and rehabilitation of maladjustments of personality in later age groups. Of great interest is the long list of great figures in history who achieved success and fame in spite of severe physical handicaps. Rather amusing to the British reader in this list is the statement about Lord Nelson of the Nile: "After the loss of an eye and a leg [*sic*] he led the British Navy to victory." Mention is made of the discordant views regarding the value of psychoanalysis, and of the criticism directed against the teachings of Freud. The book ends with a chapter headed "suggestions from psycho-analysis of value in child guidance and training", which contains very sound and useful matter both in the suggestions and in the case histories. This is a sound and useful book which should be read by ministers of religion, social workers, and those medical practitioners who have not been privileged to study more deeply the literature on personality defects and mental hygiene.

¹ "Personality Maladjustments and Mental Hygiene: A Text-book for Students of Mental Hygiene, Psychology, Education, Sociology and Counselling", by J. E. Wallace Wallin, Ph.D.; Second Edition; 1949. New York: Toronto and London: McGraw-Hill Book Company, Incorporated. 9" x 6", pp. 598. Price: \$5.00.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Happy Toll: Fifty-five Years of Tropical Medicine", by Major-General Sir Leonard Rogers, K.C.S.I., Kt., C.I.E., LL.D. (Glasgow and St. Andrews), M.D., F.R.C.P., F.R.C.S. (England), F.R.S. Indian Medical Service (Ret.), with a foreword by Major-General Sir John W. D. Megaw, K.C.I.E.; 1950. London: Frederick Muller, Limited. 8½" x 5½", pp. 294, with illustrations. Price: 18s.

An historical account of progress in research into leprosy, kala-azar, cholera, dysentery *et cetera*.

"Pye's Surgical Handcraft: A Manual of Surgical Manipulations, Minor Surgery, and other Matters Connected with the Work of Surgical Dressers, House Surgeons and Practitioners", edited by Hamilton Bailey, F.R.C.S. (England); Sixteenth Edition; 1950. Bristol: John Wright and Sons, Limited. 8½" x 6", pp. 730, with 830 illustrations. Price: 25s.

The purpose of the book is stated in the subtitle.

"Physical Aspects of Colour: An Introduction to the Scientific Study of Colour Stimuli and Colour Sensations", by Dr. P. J. Bouma; 1949. Eindhoven, Holland: N.V. Philips Gloeilampenfabriek. Sydney: Philips Electrical Industries of Australia Proprietary, Limited. 9" x 6½", pp. 316, with 113 illustrations. Price: £1 17s. 6d.

The purpose of the book is to survey the theory of colorimetry and its applications to practical problems.

"The Modern Treatment of Asthma with Special Reference to Gold Therapy", by L. Banszky, M.D. (Berlin), L.M.S.S.A. (London); 1950. Bristol: John Wright and Sons, Limited. London: Simpkin Marshall, Limited. 7" x 5", pp. 140. Price: 10s. 6d.

The author wishes to prove that asthma is not incurable and he presents his views on gold therapy.

"The Sulphonamides", by F. Hawking, M.D., and J. Stewart Lawrence, M.D., M.R.C.P.; 1950. London: H. K. Lewis and Company, Limited. 9½" x 6½", pp. 404, with 47 illustrations, some of them coloured. Price: 42s.

A review of the chemical nature, mode of action and pharmacological properties of the sulphonamides.

"William Withering of Birmingham, M.D., F.R.S., F.L.S.", by T. Whitmore Peck, M.P.S., and K. Douglas Wilkinson, O.B.E., M.D. (Birmingham), F.R.C.P. (London); 1950. Bristol: John Wright and Sons, Limited. London: Simpkin Marshall, Limited. 8½" x 5½", pp. 256, with many illustrations. Price: 21s.

The life of William Withering, who lived from 1741 to 1799.

"The Liver: Porta Mavorum (The Gateway to Disease)", by Kasper Blond, M.D. (Vienna), L.R.C.P., L.R.C.S. (Edinburgh), L.R.F.P.S. (Glasgow), and David Haler, M.B., D.C.P. (London); 1950. Bristol: John Wright and Sons, Limited. London: Simpkin Marshall, Limited. 8" x 6", pp. 280, with 36 illustrations, some of them coloured.

The authors attempt "to link a group of syndromes together by postulating a common basis for them all".

"Diseases of the Aorta: Diagnosis and Treatment", by Nathaniel E. Reich, M.D., F.A.C.P.; 1949. New York and London: The Macmillan Company. 9½" x 6½", pp. 308, with 60 illustrations. Price: 56s.

Deals with every aspect of the subject including diagnosis and treatment.

"The Diabetic Life: Its Control by Diet and Insulin: A Concise Practical Manual for Practitioners and Patients", by R. D. Lawrence, M.A., M.D., F.R.C.P. (London); Fourteenth Edition; 1950. London: J. and A. Churchill, Limited. 8" x 5½", pp. 256, with 18 illustrations. Price: 10s. 6d.

A fourteenth edition of this well-known book, the thirteenth edition of which was published in 1944.

The Medical Journal of Australia

SATURDAY, MAY 13, 1950.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

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ANOTHER REPORT ON THE VICTORIAN DEPARTMENT OF MENTAL HYGIENE.

Yet another report has been written on mental health and the mental hygiene services in the State of Victoria. In Victoria they seem to like such reports. On December 18, 1948, attention was drawn in these columns to the introduction into the Legislative Assembly of Victoria of a Bill for the *Mental Hygiene Authority Act, 1948*, and also to a report by the Mental Hospitals Inquiry Committee addressed to the Minister for Health "on the Department of Mental Hygiene, its Hospitals and its Administration". This committee, perhaps unconsciously, did a service by pointing out that as long ago as 1886 a Royal Commission was set up in Victoria to consider the insane and the inebriates. The Royal Commission of 1886 stated that the five large establishments then in existence were "too much like gaols" and the Mental Hospitals Inquiry Committee added: "This holds today." In the circumstances most people will wonder why Professor Alexander Kennedy, of Great Britain, was invited to make his report. The explanation is that Dr. H. F. Maudsley, who was going to England and America in 1948, was asked by the Victorian Government to report on certain aspects of mental hygiene abroad. On his return he suggested that an authoritative opinion should be obtained from Great Britain on the whole question of mental health in Victoria. After a conference between Victorian members of the Australasian Association of Psychiatrists, the Premier of Victoria, the Minister of Health and representatives of the British Council, it was agreed that the British Council would pay the travelling expenses of an expert from England and that the Government would be responsible for his fee and his expenses during his stay in Victoria. Professor Kennedy was selected for the work.

In the letter to the Minister, which appears on the first page of the report, Professor Kennedy states that he commenced his investigations on September 19, 1949, and concluded them on October 27, 1949. He does not set out his terms of reference, but he indicates their extent by stating that, had the terms of reference been limited, as was originally proposed, to an inquiry into the manage-

ment of the various institutions and clinics of the Department of Mental Hygiene, it would have been difficult to take a sufficiently broad view of the problems and to make sufficiently comprehensive suggestions for "the improvement and future development on humane lines of this necessary public service". Professor Kennedy states that the aim of his report has been mainly constructive—to emphasize future needs and trends—and not to lay excessive emphasis on destructive criticism. However, some of his destructive remarks are devastating—almost his opening remark has to do with "the work which the Department should be undertaking and has hardly undertaken at all". He names the basic types of service which should be provided by the Mental Hygiene Department. The first of these is the segregation of persons of unsound mind who are unable to adapt themselves to the ordinary life of the community. Professor Kennedy thinks that with some extension of the accommodation to relieve overcrowding it should be possible to deal with the needs of the community in this respect. In the matter of humane conditions, however, "some of the institutions leave much to be desired". He thinks that "a greater degree of enlightenment" could be achieved, especially by the central administration, in the application of new methods of treatment and new ideas to improve the comfort and welfare of patients with chronic mental disorder. The second basic type of service has to do with the treatment of early mental disorder. For this the number of clinics to which general practitioners and social agencies can refer patients suspected of early mental disease is quite inadequate to meet the demand. The psychiatric clinics attached to voluntary hospitals are heavily overworked, and Professor Kennedy states that in country districts patients are often sent for treatment only when the grossest signs of disturbed behaviour have become manifest. The third basic service is the treatment of psychoneurotic maladjustment. People affected in this way are not the subject of gross mental disorder, but can be helped without great expenditure of money if an assessment of the circumstantial, social and physical factors is made by a professional team at an out-patient clinic and if assistance is given in the light of the investigations. This field has scarcely been entered in the State of Victoria. In the fourth place there is the service to mental defectives. This service requires the establishment of hospitals for low-grade defectives and residential schools for defectives of higher grades and the provision of supervision, including residential hostels, for those who can be trained so as to become employable. Professor Kennedy states that the Department has made "a fine but belated effort" to improve conditions by the establishment of a well organized nucleus of such institutions, but on an entirely inadequate scale. "Even if the present institutional accommodation were increased sixfold it could not deal adequately with the number of cases urgently requiring this help." The last of the basic services mentioned is the establishment of a psychiatric liaison with other services. "Except for isolated efforts within the State this type of service has a long way to go to get abreast of modern developments." Professor Kennedy states that though improvement in the service may be costly in terms of new buildings and increased technical staff, it is impossible to envisage the mental health

services remaining in their present unsatisfactory state. It is not buildings which are important but the quality of the work done in them. Cooperation between agencies doing the same kind of work, the training of doctors and nurses and the adaptation of old premises for new purposes are far less expensive than new buildings. Professor Kennedy holds that the direction of the Department has been too much preoccupied with building and structure and too little concerned with the raising of standards of professional work and the standard of care given to patients. The correction of the present state of affairs "requires new aims and the training of a new group of medical and other workers who are interested in the treatment and rehabilitation of the patients rather than in their mere custody". Professor Kennedy insists that there must be an increasing emphasis on prevention—that in the future the greater part of the Department's work should be carried out in close touch with general hospitals and out-patient centres, as well as with the community itself, rather than within the mental hospitals, as at present. He was encouraged at some hospitals by finding that the members of the staff had kept themselves well abreast of modern developments and had not allowed their feelings of discouragement to affect the standard of their work. On the other hand he found among some of the senior officials an attitude of fatalism and therapeutic nihilism, which militated against the welfare of patients. As a matter of fact he directs a heavy attack against the Director of Mental Hygiene, Dr. J. Catarinich; he criticizes adversely his policy, his attainments and his general administration. With the details of his strictures we need not concern ourselves. We believe that Professor Kennedy's quarrel, if that word may be used to describe the denunciations in his report, is, or should be, directed against the defective system which has been allowed to grow up in Victoria in this matter by successive Ministers steeped in *laissez-faire*, rather than against individuals who have met with little real encouragement from their ministerial heads.

But let us first look at Professor Kennedy's recommendations which would call for special legislation. He thinks that a board of at least six and possibly eight members should be set up as the central authority. The members should hold office on a part-time basis. Among possible members he suggests that they should include a citizen of energy and experience as chairman, a legal authority, a consultant in psychiatry, a medical representative of the Department of Health, a financial expert, a senior physician or surgeon, and one other lay member with administrative or legal experience. The Medical Director of Mental Hygiene should not, in his opinion, be a voting member of this authority, but should be its adviser and chief executive officer. He should have an assistant medical director and a secretary who would be responsible for the administrative as opposed to the professional and technical side of the service. All members of the authority should retire on reaching the age of sixty years, with no possibility of being retained beyond that age. The authority should have certain powers of cooption and the director should have access to the Minister through the Board. The authority, Professor Kennedy further suggests, should be charged with the examination and revision of the present statutes with the view to

the production of a consolidated *Mental Hygiene Act* by 1960. In addition he suggests that a technical advisory committee be set up whose purpose it would be to keep the department up to date on technical advances in mental health work and to consider new plans and developments. The representatives should include those concerned in academic psychiatry, psychology, social science, nursing, architecture, engineering, the University of Melbourne, education and mental deficiency. In regard to the organization of the department, it is suggested *inter alia* that a new and more realistic scale of salaries is needed, offering a gradual advancement. Further, possession of a senior qualification in medicine or of a post-graduate diploma in psychological medicine should be required for admission to the established staff after 1953. Professor Kennedy refers to delays caused by the dependence of the department on the Public Works Department in the matter of building and contracts. He advises that a special section of the Public Works Department should be devoted to works undertaken for the Department of Mental Hygiene. Among the other recommendations calling for special legislation are those dealing with the *Mental Deficiency Act*, 1939; official visitors; certificates and the use of mechanical restraints; post-mortem examinations and inquests; the establishment of observation units in prisons; education in psychiatry and auxiliary professions, and nursing examinations.

Reference has been made in this discussion to the defective system which has been allowed to grow up in Victoria. In support of this contention readers are referred to discussions in these columns in the journals of March 22, 1947, and December 18, 1948. In the first of these reference is made to a report by Dr. J. Catarinich and in the second to the report of the Mental Hospitals Inquiry Committee. In these articles it is shown that both Dr. Catarinich and the Inquiry Committee refer to many matters that are among Professor Kennedy's laments. The Mental Hospital Inquiry Committee urged the creation of a controlling board of three persons—a medical practitioner, who would be a competent and practical psychiatrist; a man skilled in finance and experienced in the management of hospitals; and a man with wide knowledge of architectural and engineering practice. A discussion on which of the two suggestions is preferable cannot be undertaken at the moment. The Inquiry Committee also referred to the attitude of the Public Works Department. In the report of Dr. Catarinich, dealt with in March, 1947, he discussed the difficulties in regard to the nursing staff and pointed out how disastrous the effects of depletion had been. He complained that as a result of the shortage all treatment of mental disorders by insulin shock at Mont Park had had to be stopped and described this as disastrous. It looks as though the staff of at least one hospital has been expected to make bricks without straw. On the question of buildings it should be noted that Professor Kennedy recommends that the hospital at Kew should be pulled down without delay—it is not included in his ideas about adaptation of old premises. In December, 1948, we drew attention to the *Mental Hygiene Act*, 1948, of Victoria, and to some of its provisions. The Act has not been proclaimed.

The question which every interested person, particularly in the ranks of the medical profession, will ask is: "What

does the Victorian Government propose to do?" It cannot go on having more inquiries and further reports. Professor Kennedy tells us that the present Director of Mental Hygiene is about to retire and he declares that the vacancy should be widely advertised and adequately remunerated, so that it will be possible to attract applicants of high professional attainment "prepared to undertake boldly the task of reorganization". With this we agree, but it is certain that no applicant of "high professional attainment" will be willing to accept appointment, even at a high salary, unless he can be assured that he will not be thwarted and frustrated by those parliamentary personages to whom he will be answerable. Professor Kennedy gives his proposed authority until 1960 to complete its revision of the present statutes. There is plenty of time before 1960 for further reports to be called for from psychiatrists of Professor Kennedy's eminence, and there is also plenty of time for the keen spirit of a successor to Dr. Catarinich to be broken, however erudite he may be and however well paid.

Current Comment.

MONOGRAPHS ON PINK DISEASE AND ON ACHLORHYDRIA IN CHILDREN.

Two recently published monographs by a well-known Australian paediatrician warrant special notice. Their author, Robert Southby, is an honorary physician to in-patients at the Children's Hospital, Melbourne, and also the President of the Victorian Branch of the British Medical Association for the current year. The first of the monographs, a study on pink disease,¹ was presented in abstract at the Australasian Medical Congress (British Medical Association), held at Perth in August, 1948, and published in its shortened form in this journal on December 3, 1949. Expansion of the subject matter in the monograph has made possible the inclusion of sections on differential diagnosis, prognosis and treatment, as well as a fuller presentation of clinical and autopsy records. It is unnecessary to reiterate Southby's main points and conclusions on the subject of pink disease—they are to be found in the paper which we have already published—but it will be recalled that he brings forward clinical evidence pointing towards the possibility of a virus type of infection as being an aetiological factor in the disease, with perhaps the alimentary tract as the portal of entry. This may need reconsideration in the light of the more recent reports of Cheek and Hicks (see THE MEDICAL JOURNAL OF AUSTRALIA, January 28, 1950), who consider that pink disease is fundamentally an adaptation syndrome, "the manifold manifestations of which are causally related to hypofunction of the suprarenal gland, which is responsible for a lowered renal threshold for sodium chloride". Nevertheless, whatever the ultimate conclusion may be on aetiology, Southby's monograph is likely to remain of value, apart from other reasons, for the case reports and other useful data which it preserves.

The second monograph contains summaries of the case histories of 127 infants and children with achlorhydria.² They fall into two main groups. Approximately one-half

of the children had allergic manifestations, such as eczema, hay fever or asthma; the remainder had clinical manifestations which Southby now regards as characteristic of achlorhydria, all falling into a "diarrhoeal", an "anæmic" or a "colitic" group. The association of achlorhydria and allergic manifestations has been noted before, though not, it would appear, in the striking way recorded by Southby, and he rightly suggests that the matter requires more extensive investigation. His observation of association between achlorhydria and the other specific clinical manifestations mentioned appears, as he claims, to be original, and it is given much greater interest by the statement that the response of these patients to treatment with dilute hydrochloric acid has been so dramatic and uniform as to be regarded as specific. Those with the "diarrhoeal" syndrome, mostly infants, have often improved within twenty-four hours as regards the frequency, colour and consistency of the stools. An equally satisfactory response occurs in the "anæmic" group, composed in the main of slightly older children, "particularly when iron has been pushed in maximum doses without any real benefit". The children of the "colitic" group have been mostly older again, and here the improvement has been particularly encouraging and rapid. There appears to be no clear theoretical basis for dosage; Southby has had to make an approximate estimation and then, if necessary, to increase the amount till the desired effect was obtained, provided no untoward effects appeared. His results command attention and suggest a valuable therapeutic advance. It is to be hoped that others will be able to reproduce the favourable effects reported.

THE COCA LEAF.

ONE of John Buchan's novels, "The Courts of the Morning", centres around a mining area in a mythical South American republic, where the cosmopolitan human driftwood who administered the mines and the impressed Indian miners were dependent in their several ways upon a mysterious local drug of addiction. Buchan no doubt used fact and fancy as they suited him to tell his tale, but the picture presented is curiously parallel, though by no means identical, with that surrounding the coca leaf in a number of real South American republics. The effects of the use of this leaf on the populations in this region have been the subject of inquiry for some years now, initially by the League of Nations and more recently by a United Nations Committee of Enquiry, set up at the request first of Peru and subsequently of Bolivia to investigate the matter in their respective countries.³ The coca bush is an evergreen shrub of the genus *Erythroxylum* and native to western South America. Its leaves are put to four principal uses: for the manufacture of flavouring extracts, in medicine, for chewing and for the manufacture of cocaine; the Commission of Enquiry is concerned with the last two of these. The coca leaf has been chewed in South America for many centuries, the most generally accepted explanation of the origin of the habit relating it to the need for ameliorating the bodily distress caused by the hard conditions endured by the inhabitants of the region, conditions which still obtain today in some areas. There may be also a religious aspect to the practice. The first of the commission's tasks is "to try to assemble a body of evidence, of strictly scientific validity, to prove or disprove this theory that the chewing of the coca leaf helps man in his fight against an inimical environment, whether that environment results from entirely natural conditions or from natural conditions partly modified by economic and social factors". Some of the effects which the leaf has on "coqueros"—as the habitual chewers of it are called—are almost certainly due to the cocaine present. The amount of cocaine varies with different species and with conditions under which they are grown, but for South American plants the figures range from 0.25% to 0.9%. The amount of cocaine which a

¹ "Pink Disease: With a Clinical Approach to Possible Aetiology", by Robert Southby, M.D., B.S. (Melbourne), F.R.A.C.P.: 1950. Sydney: Australasian Medical Publishing Company, Limited. 8½" x 5½", pp. 54. Price: 6s. 6d. (4s. 6d. to resident medical officers and medical students) plus postage.

² "Achlorhydria in Children: A Clinically Recognizable Entity", by Robert Southby, M.D., B.S. (Melbourne), F.R.A.C.P.: 1949. Sydney: Australasian Medical Publishing Company, Limited. 8½" x 5½", pp. 64. Price: 7s. 6d. (5s. 6d. to resident medical officers and medical students) plus postage.

³ Bulletin on Narcotics, Number 1, October, 1949.

coquero will absorb in a day varies greatly, but it is stated that he commonly ingests twenty to thirty times more than "the usual dose given for medical purposes", a statement whose meaning is clear enough in terms of theoretical dosage, although in acceptable therapeutic practice today cocaine is not usually "given for medical purposes". The problems associated with the manufacture of cocaine from the coca leaf and its distribution (which certainly occurs) in the highly lucrative illicit drug traffic are matters of much wider interest than the local habit of chewing the leaves, and international opinion demands that something effective be done. It is not surprising, therefore, that the second of the commission's tasks is the investigation of the possibilities of controlling on both the national and international levels the process of extracting the drug wherever it is carried out in the world. The preliminary article on the Commission of Enquiry which we have quoted contains a good deal of interesting material about the local conditions relating to the chewing of the coca leaf, but we must, of course, wait for the Commission's report for authoritative detail. This local problem is not of such limited importance as might at first appear; its solution is closely linked with the international problem. It is well pointed out that the leaves which go to satisfy the appetites of the *coqueros* form also the raw material from which the dangerous drug cocaine is produced; and "all the experience in the international control of narcotics shows that the production of a drug cannot be effectively controlled throughout the world unless the production of the raw material from which it is made is also subject to some measure of control". The habit of coca-leaf chewing is commoner in Peru and Brazil than in any other country, and it is right that the work of the Commission of Enquiry, whose ultimate aim is control of the illicit cocaine traffic, should start in those countries. A pleasing feature is the fact that initiative for the inquiry came from the governments of Peru and Bolivia. A review of the history of the problem shows that in this and other facts important progress has been made since the question was first raised.

PNEUMONIA PRECEDING TUBERCULOSIS.

CLINICAL TEACHERS of the last generation were wont to warn their students that an attack of pneumonia should engender caution lest the patient show later signs of pulmonary tuberculosis. They further warned them that in such an event the pneumonia might be a genuine forerunner of other disease, or might be an accidental infection occurring in a person with stealthy and relatively non-toxic tuberculosis, or might really be a manifestation of tuberculosis itself. The emphasis now rightly laid on radiological and immunological diagnostic methods has altered the viewpoint somewhat, though it should be noted by the students of the present day that bacteriological diagnosis, at least in its simpler forms, was as sedulously applied then as now. The subject has been interestingly revived by Alvin S. Hartz in an article on the diagnosis of pneumonia preceding tuberculosis.¹ He subdivides the possible causes of the pneumonia in the manner just described. His review is made on the basis of 500 cases of tuberculosis seen in the city hospitals of Baltimore; these were studied with particular reference to precedent pneumonia, which was found in a little over 14% of the cases. The diagnosis was confirmed as far as possible, and hospital records were consulted where they existed. Hartz thinks that the greater number of patients in his series had tuberculosis when diagnosed as having pneumonia, and quotes the details of a typical patient's record. He states a number of reasons why there may be difficulty in making a clinical distinction between pneumonia and pulmonary tuberculosis. These were as follows: (i) the first definite clinical symptom in tuberculosis may be a brief episode of fever, often associated with a restricted involvement of the lungs; (ii) leucocyte counts may not always be relied upon to distinguish the two diseases; (iii) tuberculosis may attack a

lower lobe early and without other involvement at this stage; (iv) it may be very difficult to demonstrate tubercle bacilli in the sputum at an early stage; and (v) primary atypical pneumonia now constitutes a well-known but real difficulty, as the resolution may be slow, even taking some months, and the radiological picture is often by no means clear.

Some of these difficulties will be appreciated by physicians who have worked in large out-door tuberculosis departments where the children and dependants and contacts of patients with open, or suspectedly open, disease are kept under review. Hartz states that the literature contributes very little to our knowledge of this aspect of tuberculosis. It is a hard subject on which to exercise our powers of speculation; perhaps this is as well, for speculation, unless it inspires ordered inquiry, is notoriously dangerous. Still, allergy provides us with one of our most valuable methods of investigation in mass surveys, and who knows but that some of its manifestations may not provide a clue in those pulmonary lesions which may mislead even the instructed and the wary. Perhaps it is better to leave this speculation alone, lest an argument be started about epituberculosis and other mysteries. Hartz quotes Flick as stating that one-fifth of all patients with pulmonary tuberculosis gave histories of pneumonia. Other authorities outspokenly give their opinion that these "pneumonic" attacks were in truth tuberculous in aetiology. Hartz further points out that it is generally considered that pneumonia is unusual during the course of tuberculous disease of the lungs, and states that he finds it hard to reconcile the occurrence of 14% of pneumonic infections in his own series unless many of these were due to tuberculosis. This series, taken from the records of tuberculosis departments, is not really representative, but it serves its purpose in delivering the text, which is, although given here at the end of the sermon, that we should beware lest a supposed pneumonia may not be the clinical signpost of pulmonary tuberculosis.

MEDICAL CLASSIFICATION IN CIVIL LIFE.

A REFERENCE was made in these columns on April 1, 1950, to a paper by John W. Todd¹ on medical classification and disposal. The paper relates primarily to the services and in the main to the army, and our comment on that occasion was confined to that aspect. However, Todd has also some interesting things to say on the implications of the subject for civil life. His view, and there is much to be said for it, is that the right standard of fitness is the capacity of the individual to carry out what is required of him. He advocates adoption of this standard in the army, quoting it as the usual standard of civil life, and he claims that classification of this type does not require the services of a doctor. However, as he points out, it is not correct to regard this as the invariable standard in civil life. For certain occupations a qualifying medical examination is required, and there is an increasing tendency to extend this. On first thoughts this would seem to be a good thing, but Todd is prepared to stimulate second thoughts. He states that when a man is medically examined before being accepted for some kind of work, an answer may be required to each of the four following questions: (i) Is he capable of doing the work? (ii) Is it advisable, for his health's sake, that he should do the work? (iii) Will he be likely to give continuous effective service in the work for an indefinite period in the future? (iv) Will he be a danger to others? Todd discusses the justifiability or otherwise of preliminary medical examination in the light of each of these questions. The answer to the first question, taken on its own merits without intrusion of the other questions, is surely, as Todd asserts, not a medical matter at all. "The way to decide whether a man can efficiently hew coal, lay bricks, write leading articles, or direct a company is either to study his previous record in these directions or to give him an appropriate examina-

¹ *Annals of Internal Medicine*, December, 1949.

¹ *The Lancet*, December 31, 1949.

tion." Assessment of capacity by physical or psychological examination, even when it appears quite appropriate, is never free from fallacy. Often enough it is not even appropriate. The second question raises much more controversial issues. Todd considers that to refuse a man work because he may damage himself is nearly always an unwarranted interference with his personal liberty. This point of view must be respected, though there will be some who are quite unable to see it. It is true, as Todd states, that public opinion favours the idea that men should in general be free to do what they like, provided that they do no direct damage to anyone else, and that the law as a rule supports this, "making no attempt to prevent people from, say, drinking excessive amounts of alcohol, climbing precipices, engaging in motor races, or going on expeditions to the South Pole". Todd allows (though with little enthusiasm) two possible exceptions—epileptics and juveniles—but many will feel that his general assertion is too sweeping. Public opinion is not unanimous on the lines that he suggests. The question of doing "no direct damage to anyone else" cannot be lightly dismissed, and indirect damage must sometimes be considered. In this complex world "no man liveth unto himself". On the other hand, many accept cheerfully the possibility of suffering damage because of the free action of others, for the sake of retaining the right to act freely themselves when they wish. The conflict is not easily resolved. Extremists of the two schools regard their respective opponents as irresponsible or repressive. Fortunately there is a large body of moderate opinion which is prepared to judge each case on its merits. One example may be cited—it is not mentioned by Todd, but supports his contention from one point of view—to emphasize the need for common sense in seeking to remove a man from a "harmful" occupation. It is that of the miner who develops pneumokoniosis after spending the bulk of his life in the mine. If he is expelled from the mine, forbidden the one job he knows, he will probably have to do heavy labouring work or potter along in some unskilled occupation at a substandard wage. Many people feel that it is better that he should at least be given the right to continue in his "harmful" occupation if he chooses. In discussing his third question, Todd asserts that to refuse a man employment because he may be unreliable through bodily disease is unjust. This is another generalization which inevitably raises a conflict, and that on the unhappy ground of the respective rights of employer and employee. It is surely equally wrong that a man should be denied all congenial employment because of some defect and that an employer should be forced to employ him in a particular capacity to the serious detriment of the employer's interests. Todd's implication that a medical examination to answer his third question is not justified, as being a likely source of injustice, is not convincing. The interests of all concerned may well be best served by medical examination, provided it is the basis of advice and not of dogmatic acceptance or rejection. The final question, that concerning direct danger to others, raises medical rather than general controversy. Todd suggests that there seem to be only two common conditions—pulmonary tuberculosis and epilepsy—whose victims are liable to objection on this account. Some would go further. For example, at the recent international conference on pneumokoniosis held in Sydney, one delegate referred to the conflict of opinions still existing on the direct infectiousness of "open" pulmonary tuberculosis, and seriously questioned the scientific justification for excluding men with "open" tuberculosis from a mine in which the miners were liable to develop silicosis. The weight of opinion at the conference was against this view, but it exists. On the other hand, it is not difficult to extend the list of defects which make a man a danger to others in particular occupations; colour blindness is an obvious example. The answering of Todd's fourth question appears to be a more than sufficient justification for preliminary medical examination in many instances. Indeed his conclusion, on the basis of consideration of his four questions, that "there is no real place for a medical examination as a part of the

selection of adults for jobs", is not convincingly supported. We may well sympathize with him and support him in his protest at the dogmatic exclusion of a man from a job on the opinion of a single medical practitioner, if this occurs in the way he describes in relation to the National Health Service of Great Britain. Nevertheless, it would seem that in his zeal he has overstated his case.

THE DANGERS OF ANTICOAGULANT THERAPY.

Those who are experienced in the use of anticoagulants are well aware of their therapeutic limitations and of the hazards associated with their administration, and being forewarned they are forearmed. With the extension of the use of these preparations to a wider, often less informed circle, they may be applied with less discrimination and greater hazard. For this reason we draw attention to a recent article by George D. Lilly and Robert M. Lee¹ in which they seek to push the pendulum hard away from its present direction of swing. They provide details of five previously unreported deaths and of five serious post-operative complications resulting from anticoagulant therapy, and make some pertinent comments to the disadvantage of anticoagulant drugs and particularly of dicoumarol. Reports of complications and deaths from hæmorrhage associated with these drugs are, of course, not new, but it may be questioned whether or not they have received the publicity they deserve. In any case they prompt us to ask, firstly, how far the complications can be prevented, and secondly, whether the therapeutic value of anticoagulants outweighs their potential dangers. In the matter of prevention, Lilly and Lee draw attention to the technical difficulties of reliable estimation of prothrombin levels and claim that sudden, severe, and even fatal hæmorrhage may complicate post-operative dicoumarol therapy, even when carefully controlled by experts. They assert that dicoumarol is a hazardous therapeutic agent at best, and that when it is employed by inexperienced or inattentive doctors it rapidly assumes the role of a fatal poison. Few will dispute the second assertion, and the warning should be heeded, but some will feel that the first assertion needs qualification. Series have been reported with a complete absence of serious complications, for example, the admittedly small series presented by W. McI. Rose in this journal on November 5, 1949. As Rose points out in his paper, the anticoagulants at present available are not perfect, but the experience gained by their use is valuable, apart from the benefit obtained by many patients, and we should be able to look forward to the perfecting of the drugs and the methods of administering them. Meantime, we must consider the second question, that of whether the usefulness of the drugs outweighs the potential danger. Lilly and Lee approach this constructively by drawing attention to alternative measures which tend to be overlooked. They consider that there is no justification for the use of anticoagulant therapy for phlebothrombosis and thrombophlebitis limited to the lower extremity below the groin, because "proper vein interruption is a more certain, much safer, quicker, and much less expensive method for the control of this condition". The prophylactic use of anticoagulants after operations is, they assert, fraught with hazards and its general use probably will lead to an increase in mortality rates, as well as medico-legal complications; correct bed posture and properly supervised exercises will accomplish the same prophylactic results safely and economically.

No doubt Lilly and Lee's views will be challenged, but all will agree that they must be heeded to some extent. A discussion which followed the reading of their paper at a meeting of the Society for Vascular Surgery at Atlantic City brought strong support and only qualified criticism. It seems clear that the anticoagulant drugs at present available should be used only with care and discrimination.

¹ *Surgery*, December, 1949.

Abstracts from Medical Literature.

PHYSIOLOGY.

The Site of Action of Inhaled Diphsogene.

J. M. TOBIAS, S. POSTEL, H. M. PRATT, C. C. LUSHBAUGH, M. N. SWIFT AND R. W. GERARD (*The American Journal of Physiology*, August, 1949) report experiments designed to discover the locus or loci of action of inhaled phosgene and diphsogene. Evidence from unilateral gassing, crossed circulation and transfusion experiments, and the results of parapulmonic administration of the toxic agent, show that the inhaled substance *per se* acts only in the lungs. Pathological changes in other organs are secondary to this. Action on the lung is probably direct; there is no evidence for a circulating pneumotoxin or other toxic substance. The damaged lung may, however, liberate thromboplastin and capillary permeabilizing substances into the oedema fluid. Bronchioles are certainly injured, with some degree of inflammatory response, necrosis or scarring. Bronchiolar narrowing of variable severity and duration occurs shortly after exposure, and may involve both active bronchoconstriction and passive narrowing due to the mural inflammation and oedema. It can account for the early emphysema. There is no unequivocal evidence of damage to the alveoli. Although peribronchiolar perivascular oedema precedes alveolar oedema, such a sequence could follow prior damage to alveolar capillaries. Massive doses of the toxic agent produce pulmonary damage which is qualitatively different from that following more moderate, though still 100% lethal, doses. Death after moderate doses is due to anoxia developing gradually with pulmonary oedema; death after massive doses is immediate, due to occlusion of the pulmonary circulation from intravascular clotting and acid haemolysis.

Oxygen Consumption and Cooling Rates in Immersion Hypothermia in the Dog.

K. E. PENROD (*The American Journal of Physiology*, June, 1949) reports experiments illustrating the variable results obtained (due to shivering) when anaesthetized dogs were cooled in water. Seven lightly anaesthetized dogs were each cooled twice in an iced-water bath to a rectal temperature of 20° C. and rewarmed in room air at 25° C. to 28° C. and/or warm water at 40° to 42° C. The oxygen consumption and rates of temperature change were recorded continuously. One of the dogs, which shivered considerably on both coolings, was subjected to a third cooling under deep, prolonged anaesthesia. In addition, three observations of cooling rates of dead dogs are presented. It is shown that the oxygen consumption varied directly with the shivering response, and in the fourteen experiments four distinct patterns were detectable. It is suggested that variations in shivering response patterns may be a function of susceptibility to barbiturate anaesthesia. Below 23° C. rectal temperature, shivering is no longer a factor, and the oxygen consumption of all dogs falls to approxi-

mately one-third that of the pre-cooling control level. During rewarming all dogs shivered greatly when exposed to room air, beginning between 24° and 28° C. rectal temperature. The shivering could be stopped almost immediately by immersion in warm water. The oxygen consumption pattern followed very closely that of the shivering. In four of the experiments, through profound shivering the dog was able to delay the body cooling so as to make the mean cooling rate slower than that of a dead animal. In the other ten experiments the cooling rates were all faster than for dead dogs.

Effect of Ligation of the Pulmonary Artery.

W. E. BLOOMER, W. HARRISON, G. E. LINDSKOG AND A. A. LIEBOW (*The American Journal of Physiology*, May, 1949) state that it has long been known that the blood arriving by way of the bronchial arteries is in itself sufficient to support the life of the lung provided that there is not an excessive back pressure in the pulmonary veins. Experiments were then carried out in the dog, to test to what extent a lung whose main pulmonary artery has been ligated can carry on the function of respiration, and whether such respiratory function may increase with time. They state that in the dog a lung with a ligated pulmonary artery can maintain respiratory function. The capacity of such a lung to absorb oxygen gradually increases over a period of months. When oxygen rather than air is supplied through a bronchospirometric cannula, while the intact lung continues to breathe air, the oxygen content of the arterial blood is found to rise. The effective flow in the bronchial arteries of such a lung increases with time after ligation, as measured by bronchospirometry and an application of the Fick principle. The increase in circulation is in step with the expansion of the vascular bed demonstrated in anatomical studies by the vinylite method as reported elsewhere. After the fourth month, with the animal under sodium pentobarbital anaesthesia, the flow usually exceeds one litre per square metre per minute. This flow is largely a burden on the left side of the heart, the output of which becomes roughly one-third greater than that of the right. A similar situation obtains in human disease, such as bronchiectasis or congenital pulmonary stenosis, in which there is an extensive collateral circulation to the lungs.

Effect of Carbon Dioxide on Intestinal Motility.

D. W. NORTHP, J. C. STICKNEY AND E. J. VAN LIERE (*The American Journal of Physiology*, July, 1949) state that when an animal is killed by a blow on the head and its abdomen is opened immediately, the intestinal tract is frequently seen in a state of violent activity. This is presumably due to the acute asphyxia which develops upon sudden cessation of the circulation. It has been shown that in rats and mice anoxic anoxia alone, without accumulation of carbon dioxide, depresses the motility of the small intestine. Experiments were carried out to determine whether the accumulation of carbon dioxide alone can be responsible for increased activity of the intestine. The dogs and rats were exposed to increased carbon dioxide concentrations ranging from 7.5% to 20%, and intestinal motility was determined by

measuring the length of intestine traversed by a charcoal-acacia mixture during a given time. Motility was depressed in the dog by a concentration of 7.5% or more, and in the rat by a concentration of 15% or more.

Glucose Tolerance and Atmospheric Decompression.

G. H. KEYES AND V. C. KELLY (*The American Journal of Physiology*, September, 1949) report that from a study of the effect of adrenaline on dogs under various conditions, the indications are that stimulation of the sympathico-adrenal system plays only a minor role in most cases in which a glucose tolerance test is performed on dogs at a simulated altitude of 24,000 feet. Apparently there is sufficient oxygen at this altitude to allow functioning of the enzymes involved in glucose metabolism, so that actually there is more rapid formation of glycogen than at ground level. The factor playing the predominant role is an increased production from the adrenal cortex. Although there is delayed return of the blood glucose content to the baseline level after injection of glucose at a simulated height of 24,000 feet, careful perusal of the data presented indicates that there is actually an increase in glucose tolerance. The injected glucose is converted to glycogen early in the test more rapidly than at ground level, and the high glucose levels thereafter are due to gluconeogenesis from fat and protein brought about by the increased production of hormones by the adrenal cortex. Adrenaline may play a minor role in certain cases in which the blood glucose level is maintained at greatly increased levels.

Influences of Previous Diet on Metabolism during Fasting.

S. ROBERTS AND L. T. SAMUELS (*The American Journal of Physiology*, July, 1949) report that the ability of the rat, previously given by forced feeding a diet of high fat content for six weeks, to survive longer during fasting than similarly treated animals previously maintained on a diet of high carbohydrate content, appears to be related to the capacity of the former preparation to continue burning mainly fat for energy during the fasting period, thus sparing carbohydrate and protein stores. This was evidenced by an enhanced excretion of acetone bodies in the fat-fed group, a slower disappearance of blood sugar, and a lowered rate of nitrogen excretion after initiation of the fast. On the other hand, the apparent rapid depletion of carbohydrate stores in the carbohydrate-fed animal after the deprivation of food, as indicated by the rapid early decline in blood sugar, was followed by increased utilization of protein for energy. It may be deduced that the earlier death of the animals in the latter group was associated with a more rapid depletion of body protein to the point where there were no longer sufficient quantities of this substance available to satisfy the minimal requirements of the organism.

Resuscitation from Obstructive Asphyxia.

H. SCHWERMA, A. C. IVY, W. L. BURKHARDT AND A. F. THOMETZ (*The American Journal of Physiology*, February, 1949) report that obstruction asphyxia was produced in nineteen dogs

to establish the range and mean values in the time of onset of the critical changes which follow such a procedure. It was found that the occurrence of the first terminal gasp, which had been used as the point of starting resuscitation in experiments on carbon monoxide asphyxia, corresponded with a mean blood pressure of 42 millimetres of mercury. This blood pressure was taken at the point at which resuscitation would be applied to obtain comparative values with different methods of resuscitation. The following observations were made: 32% of dogs survived when no treatment was given; 35% of dogs given manual artificial respiration in air survived; 75% of dogs survived when mechanical artificial respiration in air was used; 71% of dogs survived when mechanical artificial respiration with pure oxygen was used; 85% of dogs survived when mechanical artificial respiration with a mixture of 7% of carbon dioxide and 93% of oxygen was used. The mechanical artificial respiration was more effective in producing a large minute volume of ventilation than manual respiration; this accounts for its greater effectiveness in resuscitation. The type of gas used produced no significant difference in the results.

BIOCHEMISTRY.

Cryoglobulin.

A. ABRAMS *et alii* (*The Journal of Biological Chemistry*, November, 1949) have determined the sedimentation constant, diffusion constant, ultraviolet absorption spectrum, and electrophoretic mobility of a cryoglobulin isolated from the lymph nodes and serum of a patient with lymphosarcoma. The protein, electrophoretically homogeneous at pH 4.7 and 8.6, but containing two components of different sedimentation constant, did not completely correspond in its properties to any cryoglobulin previously described. The significance of the finding of similar abnormal proteins in both serum and lymphatic tissue of the same patient is discussed.

Biosynthesis of Urea.

S. RATNER and A. PAPPAS (*The Journal of Biological Chemistry*, July, 1949) have studied the synthesis of arginine from citrulline in liver homogenates under aerobic and anaerobic conditions, comparing aspartic acid with glutamic acid as $-NH_2$ donors. They state that aerobically, arginine formation proceeds more rapidly with aspartic acid as the $-NH_2$ donor than with glutamic acid, when the reaction mixture is supplemented with a respiratory substrate as the source of high energy phosphate. Evidence is presented to show that oxidation of glutamic acid, through the tricarboxylic cycle, supplies both the aspartic acid and the high energy phosphate required for arginine synthesis. Under these conditions aspartic acid is formed by transamination of glutamic acid with the oxalacetic acid arising by glutamate oxidation. Energy-rich phosphate is generated by phosphorylations coupled with oxidation. The inhibition of arginine synthesis by α -ketoglutarate and by pyruvate when glutamate is the $-NH_2$ donor is explained as being due to interference, at the transamination step, with the obligatory formation of

aspartic acid. The inhibitions were not observed when aspartic acid was supplied directly. Malonate has no effect on arginine synthesis *per se*; the inhibition observed when glutamate is employed is exerted through inhibition of succinic dehydrogenase, thus preventing oxalacetate formation. Oxalacetate or a closely related precursor therefore overcomes the inhibition. Conditions for effecting the anaerobic synthesis of arginine in liver homogenates are described. A scheme is presented for the physiological pathway of amino nitrogen transfer from amino acids to form urea, showing the interrelationships with the tricarboxylic cycle and with transamination.

Water in Protein-Deficient Oedema.

S. E. DICKER (*The Biochemical Journal*, January, 1950) has demonstrated a sudden decrease of the amount of water excreted by the kidneys, when a protein-deficient isocaloric diet was substituted for a standard diet in rats. This decrease of the urinary volume could not be explained by a change in the total water load. The urinary concentration of chloride and sodium ions remained unaffected. The urinary excretion of chloride and sodium ions in twenty-four hours was, however, greatly decreased. After several weeks of a protein-deficient diet, the urinary concentration of chloride and sodium ions decreased, while the urine volume increased. In spite of this increase of the urine volume there was a further decrease of the urinary excretion of chloride and sodium ions. On correlation of these changes in the urinary excretion with those occurring in blood plasma and skeletal muscle in rats fed on a protein-deficient diet, it could be shown that (a) the initial decrease of the urine volume, without changes in the ionic concentration, corresponded to a slight but significant water retention accompanied by a small increase in the extracellular fluid space; (b) the decrease of the urinary concentration of chloride and sodium ions coincided with a great increase of the extracellular fluid phase. Clearance estimations of inulin, diodone, and chloride and sodium ions provided the following information. (a) Soon after the rats began to receive a protein-deficient diet, the mean glomerular filtration rate decreased, but remained independent of urine flow; this decrease in the glomerular filtration rate was accompanied by an increase in the tubular rate of water reabsorption. Diodone and chloride and sodium ion clearances were normal. (b) After several weeks of a protein-deficient diet, glomerular filtration rate was closely correlated with that of urine flow. The clearances of diodone and of chloride and sodium ions were significantly depressed. The administration of a standard amount of water by stomach tube to rats fed on a protein-deficient diet resulted in a diuresis which was delayed in its onset and decreased in its amount, when compared with that in normal rats. The first decrease in the renal response to water administration occurred in rats after one to two weeks of feeding on a protein-deficient diet; the minimum response was observed after about seven weeks. The urine of rats fed on a protein-deficient diet contained an antidiuretic substance. The antidiuretic activity of the urine increased the longer the animals were fed on one of the experimental diets. The first appearance of antidiuretic

activity in the urine coincided with the decreased glomerular filtration rate, the increased tubular water reabsorption and the decreased renal response to water administration. Maximum antidiuretic activity of the urine was found in rats fed for seven to nine weeks on a protein-deficient diet. It was concluded that a renal factor is involved in the onset and maintenance of oedema of protein deficiency.

Oxidation of Fatty Acids.

S. WEINHOUSE *et alii* (*The Journal of Biological Chemistry*, December, 1949) have tested the theory that carbohydrate inhibits ketogenesis by competitively inhibiting fatty-acid oxidation, by measuring the effect of endogenous glycogen and added pyruvate on the rates of oxidation of a series of short chain, isotopically labelled fatty acids, the extent of oxidation being determined by the amount and isotopic content of the respiratory carbon dioxide. Not only was there no inhibition, but in many experiments carbohydrate increased the rate of fatty-acid oxidation. Ketogenesis was inhibited in the "fed" liver by the addition of pyruvate when acetate and butyrate were used as substrates, but was essentially unchanged when hexanoate and octanoate were used.

Biochemical Adaptation.

N. R. LAWRIE and J. YUDKIN (*The Biochemical Journal*, Volume XLV, Number 4) studied the effect of varying the proportions of dietary protein, fat and carbohydrate on the alkaline phosphatase of the small intestine of rats. Diets containing 55% or 70% of sucrose produced a significantly lower amount of enzyme than diets in which the sucrose was replaced by fat or protein.

Acetate and Pyruvate in Diaphragm.

C. A. VILLEE and A. B. HASTINGS (*The Journal of Biological Chemistry*, November, 1949) report that the metabolism of acetate and pyruvate to carbon dioxide, the synthesis of glycogen, the accumulation of lactic acid, and the disappearance of pyruvate have been measured *in vitro* in diaphragm muscle isolated from normal, diabetic and adrenalectomized rats. The amount of acetate metabolized to carbon dioxide is much less in muscle from diabetic rats than in muscle from normal rats. This decrease is not restored by the addition of insulin. The metabolism of acetate to carbon dioxide in muscle from adrenalectomized rats at the normal level was unaffected by insulin. The amount of pyruvate metabolized to carbon dioxide was also less in muscle from diabetic animals than in normal muscle, but this was restored to normal by the addition *in vitro* of insulin. The total utilization of pyruvate was also decreased in diabetic muscle and brought back to normal when insulin was added. Insulin caused no significant increase in either the total utilization of pyruvate or its metabolism to carbon dioxide in muscle from normal or adrenalectomized rats. Adrenalectomy produced an increase in the fraction of the total pyruvate utilized, that is, metabolized to carbon dioxide, and a decrease in the accumulation of lactate. The effects were also studied of the addition of certain intermediates in the Krebs tricarboxylic acid cycle on the metabolism of acetate and pyruvate by diaphragm muscle from normal and diabetic rats.

British Medical Association News.

ANNUAL MEETING.

The annual meeting of the New South Wales Branch of the British Medical Association was held at the Robert H. Todd Assembly Hall, British Medical Association House, 135 Macquarie Street, Sydney, on March 30, 1950, Dr. J. KEMPSON MADDOX, the President, in the chair.

ANNUAL REPORT OF COUNCIL.

The annual report of the Council was received and adopted on the motion of Dr. H. R. R. Grieve, seconded by Dr. A. J. Collins. The report is as follows.

The Council presents the following report on the work of the Branch for the year ended March 30, 1950.

Membership.

The membership of the Branch is now 2930, as against 2845 at the date of the last report. The additions have included 134 elections, re-elections and resumptions, and 86 removals into the area of the Branch; while the losses have included 15 by resignation, 66 removals out of the area of the Branch, 24 by default in payment of subscription, and 30 by death. The losses by death were as follows: Dr. R. T. Kennedy, Dr. A. C. Arnold, Dr. E. A. Stormon, Dr. P. G. Heffernan, Dr. C. Gordon MacLeod, Dr. A. J. Newton, Dr. A. L. Stafford, Dr. H. Skipton Stacy, Dr. R. A. Fitzherbert, Dr. P. Macarthur, Dr. L. F. Claremont, Dr. P. H. Wallman, Dr. Curt Rosenthal, Dr. M. J. Plomley, Dr. R. S. Godsall, Dr. T. Roberts, Dr. Lucy Gullett, Dr. W. H. Donald, Dr. H. H. B. Bradley, Dr. R. W. Richards, Dr. R. G. Arnott, Dr. H. Odillo Maher, Dr. W. Alice McCloy, Dr. S. J. Woolnough, Dr. J. Foreman, Dr. V. R. Elphick, Dr. R. A. M. Allen, M.C., Dr. S. R. Stafford, Dr. R. C. Trall, Dr. G. P. U. Prior.

Obituary.

Joseph Foreman.

In the death of Dr. Joseph Foreman the medical profession has suffered a great loss.

A member of the Council for a number of years, he was President in 1901-1902. He was a member of the association for sixty-seven years.

Congratulations.

Congratulations were extended to Sir Victor Hurley, K.B.E., C.B., C.M.G., V.D., President of the Federal Council, on the occasion of a knighthood being conferred upon him by His Majesty the King.

Meetings.

Ten ordinary meetings of the Branch (including the annual general meeting) and four extraordinary meetings of the Branch and ten clinical meetings were held. The average attendance was 75. Eight of the ordinary meetings were held in conjunction with meetings of special groups, namely: April 28, with the Oto-Rhino-Laryngological Society of New South Wales (British Medical Association) and the Section of Neurology, Psychiatry and Neurosurgery; May 26, with the Section of Medicine and the Section of Pathology; August 25, with the Section of Surgery and the Section of Pathology; September 29, with the Section of Medicine and the Section of Neurology, Psychiatry and Neurosurgery; October 27, with the Section of Neurology, Psychiatry and Neurosurgery and the Section of Sociological Medicine; November 10, with the Section of Obstetrics and Gynaecology and the Section of Neurology, Psychiatry and Neurosurgery; November 24, with the Section of Medicine; December 8, with the Section of Pediatrics and the Section of Pathology.

The clinical meetings were held at the Rachel Forster Hospital for Women and Children, Royal Alexandra Hospital for Children, Royal Prince Alfred Hospital, Royal North Shore Hospital, Women's Hospital, Crown Street, Lewisham Hospital, Sydney Hospital, Saint Vincent's Hospital, Broughton Hall Psychiatric Clinic and Saint George Hospital.

The business of the meetings included sixteen papers. At an extraordinary general meeting held on April 8, 1949, members were advised of the action taken by the Federal Council following the passing by the Chifsey Government of *The National Health Service Act* and an amendment to *The Pharmaceutical Benefits Act*, particular reference being made to the advice which the Federal Council had received from its legal advisers on the constitutional validity of *The*

Pharmaceutical Benefits Act. At an extraordinary general meeting held on March 9, 1950, the proposals of the new Government (Menzies) for a national health service were considered and the policy of the New South Wales Branch in regard thereto defined. At an extraordinary general meeting held on December 20, 1949, Article 11(a) (Subscription) and Article 69 (Winding Up) were amended. At an extraordinary general meeting held on December 20, 1949, By-Law 4 (Annual Subscription) was amended to provide that a person who shall have been a member of the association for fifty years shall not be required to pay any annual subscription.

Representatives.

The Branch was represented as follows:

1. Council of the British Medical Association (1949-1952): Dr. Isaac Jones.
2. Representative Body of the British Medical Association (1949-1950): Representative, Dr. G. C. Halliday; Deputy Representative, Dr. N. M. Gregg.
3. Annual meeting, British Medical Association, Harrogate, 1949: Delegate, Dr. J. Coen.
4. Federal Council of the British Medical Association in Australia: Dr. A. J. Collins, D.S.O., M.C., Dr. H. R. R. Grieve, Dr. A. J. Murray, O.B.E., Dr. W. F. Simmons.
5. Contract Practice Subcommittee of the Federal Council: Dr. H. R. R. Grieve.
6. Australasian Medical Publishing Company, Limited: Dr. W. L. Calov, Dr. W. F. Simmons, Professor L. F. Dods, M.V.O.
7. New South Wales Post-Graduate Committee in Medicine: Dr. A. C. Thomas, Dr. E. F. Thomson.
8. Ophthalmic Association, Limited: Dr. Colin C. Ross.
9. The Flying Doctor Service of Australia: Representative, Dr. George Bell, O.B.E.; Deputy Representative, Dr. J. G. Hunter.
10. Council of the Bush Nursing Association: Dr. J. K. Maddox.
11. Hospitals Contribution Fund of New South Wales: Dr. Hugh Hunter.
12. Saint John Ambulance Association: Dr. J. K. Maddox.
13. Standards Association of Australia: (i) Institutional Supplies Committee, Dr. S. W. G. Ratcliff; (ii) Sectional Committee on Interior Illumination of Buildings, Dr. N. M. Macindoe; (iii) Committee on Standards of Laboratory Glassware and Volumetric Glassware, Dr. F. S. Hansman; (iv) Committee on Protective Glass for Welding, Dr. N. M. Macindoe; (v) New South Wales Committee on Protective Occupational Clothing, Dr. W. T. Nelson; (vi) Paint and Varnish Subcommittee No. 8, Dr. W. T. Nelson; (vii) New South Wales Committee on Eye Protection, Dr. N. M. Macindoe.
14. Medical Officers' Relief Fund (Federal): Local Committee of Management for New South Wales: Dr. E. H. M. Stephen, Dr. A. J. Murray, O.B.E., Dr. A. J. Collins, D.S.O., M.C.
15. Medical Appointments Advisory Committee (Hospitals Commission of New South Wales): Dr. L. A. Dey.
16. Special Departmental Committee for the Investigation of Maternal Deaths: Dr. E. A. Tivey.
17. Recreation and Leadership Movement: Professor Harvey Sutton.
18. Council of the Royal Society for the Welfare of Mothers and Babies: Sir Robert Wade, Dr. E. H. M. Stephen.
19. New South Wales Medical Board: Dr. J. R. Ryan.
20. Workers' Educational Association: Dr. R. A. M. Allen, M.C.
21. Council of the New South Wales Institute of Hospital Almoners: Dr. R. A. R. Green.
22. Council of Education: Dr. A. J. Collins, D.S.O., M.C.
23. Examining Council of the Society of Laboratory Technicians of Australasia (New South Wales Branch): Dr. F. S. Hansman and Dr. E. F. Thomson.
24. Medical Finance, Limited, Board of Directors: Dr. E. A. Tivey, Dr. A. C. Thomas, Dr. George Bell, O.B.E., Dr. G. C. Halliday.
25. Council of the New South Wales Institute of Dietitians: Dr. H. R. R. Grieve.
26. Coordinating Council for the Physically Handicapped: Dr. R. A. R. Green.
27. Road Safety Council of New South Wales: Dr. J. K. Maddox.
28. Federal Medical War Relief Fund: Local Committee of Management: Dr. A. J. Collins, D.S.O., M.C., Dr. A. C. Thomas, Dr. A. J. Murray, O.B.E.

29. Road Safety Council of New South Wales: (i) Committee for the Determination of Visual Standards for Motor Drivers, Dr. N. McCa. Gregg; (ii) Committee for the Determination of Physical Fitness of Drivers of Motor Vehicles, Dr. J. H. Halliday.
30. Florence Nightingale Memorial Committee of Australia: Dr. B. T. Edye.
31. Australian Tuberculosis Association, New South Wales Division: Coordinating Committee: Dr. W. Cotter B. Harvey.
32. The Committee for Placement of Resident Medical Officers: Colonel A. M. McIntosh.
33. Australian Physiotherapy Association: Dr. B. G. Wade.

Council.

(a) The attendance of members of the Council and of the standing committees was as set out in the accompanying table.

(b) The representatives of the Local Associations of Members appointed on the invitation of the Council to attend the regular quarterly meetings of the Council were as follows: Dr. W. McP. Roberts (Blue Mountains), Dr. L. S. Woods (Boronia), Dr. J. M. Dowling (Brisbane Water District), Dr. L. Abramovich (Canterbury-Bankstown), Dr. G. N. M. Aitkens (Central Western), Dr. A. D. Frost (Eastern Suburbs), Dr. A. McNeil (Eastern District), Dr. F. P. M. Solling (Hunter Valley), Dr. G. W. Ashby (Illawarra Suburbs), Dr. H. S. Oag (Kuring-gai District), Dr. T. S. Douglas (Northern District), Dr. J. L. Roberts (North Eastern), Dr. R. Cuttle (Southern District), Dr. A. McL. Harper (South Eastern), Dr. C. H. Jaede (South Sydney), Dr. E. S. Stuckey (Warringah District), Dr. W. W. Cameron (Western), Dr. R. F. Back (Western Suburbs).

Library.

Dr. J. Kempson Maddox was appointed to the position of Honorary Librarian.

Visitors to the library	6524
Books lent to members	1200
Journals lent to members	4654
Books added to the library	275
Journals added to the library	31

The number of visitors to the library is still maintaining an average of over 500 per month, and the number of journals lent to members increased by 117 for the period under review. Books added to the library by purchase and donation increased by 89 and the number of new journals by 18. It is pleasing to note that country members are making use of the library facilities, inquiries coming from 236 and publications lent numbering 352.

Owing to the increasing size and use of the library the accommodation at present available is now becoming inadequate.

It was decided that a catalogue of the text-books *et cetera* added to the library since 1938, and a complete list of the periodical holdings, be printed, and that a copy of the catalogue be forwarded to every member at an early date.

The association is pleased to record its appreciation of donations received from the following: the Editor, THE MEDICAL JOURNAL OF AUSTRALIA; Army Medical Library, Washington; Adelaide Hospital; Association of American Physicians; Australian School of Pacific Administration; British Empire Cancer Campaign; Brompton Hospital; Abbott Laboratories; Carnegie Endowment for International Peace; Commonwealth Health Department; Commonwealth X-Ray and Radium Laboratory; Council for Scientific and Industrial Research; Australian Hospital Association; Dental Association, New South Wales Branch; Department of Labour and National Service; Diabetic Association; Fellowship of Post-Graduate Medicine; Australian Institute of Anatomy; International Labour Office; Institute of Living; Lewisham Hospital; Organization for Scientific Research, Batavia; Oliver and Boyd (Honyman Gillespie Trust); National Foundation for Infantile Paralysis; Mayo Clinic, Rochester; National Health and Medical Research Council; Post-Graduate Committee in Medicine in the University of Sydney; Royal Melbourne Hospital; Sydney Hospital; Society of Laboratory Technicians of Australasia; University of Queensland, Medical Society; University of Melbourne; World Health Organization; United States Information Library; Dr. George Bell; Dr. S. P. Bellmaine; Dr. E. P. Blashki; Dr. D. G. Carruthers; Dr. F. W. Clements; Dr. H. J. Daly; Dr. H. C. R. Darling; Dr. M. S. S. Earlam; Dr. J. P. Findlay; Dr. Morris Fishbein (United States of America); Dr. E. M. C. Friedlander; Dr. E. W. Frecker; Dr. F. B. Halliday; Dr. C. R. Hodgson; Dr. R. Jeremy; Dr. J. K. Maddox; Dr. D. G. Maitland; Colonel A. M. McIntosh; Mr. Malcolm McCormick; Dr. T. Y. Nelson; Dr. Victor Riddell (England); Mrs. F. Savage; Mr. Whitney H. Shepardson (United States of America); Dr. R. J. Whiteman; Dr. L. J. Woodland; the College of Radiologists (Aust. and N.Z.); the Sections of Obstetrics and Gynaecology and Medicine; the Oto-Rhino-Laryngological Society; and the Ophthalmological Society of Australia (British Medical Association).

Affiliated Local Associations of Members.

After communicating with the local associations concerned, the shires of Muswellbrook and Merriwa, which were previously part of the area of the Northern District Medical Association, were added to the area of the Hunter Valley Medical Association.

ATTENDANCE AT COUNCIL AND STANDING COMMITTEE MEETINGS.

	Council.	Committees.				
		Executive and Finance.	Organization and Science.	Medical Politics.	Hospitals.	Ethics.
BELL, GEORGE, Honorary Treasurer	8	12	1	10	1	2
BEVERIDGE, LORNA D.	9	—	3	—	—	—
BLACKBURN, SIR CHARLES	8	—	—	—	—	—
DAWSON, W. S.	7	—	3	—	—	—
DEAKIN, J. E. F.	10	—	—	11	1	—
DOUGLAS, T. S.	10	—	—	—	—	—
EDYE, B. T.	10	—	—	—	—	—
ELLIOTT, G. F.	9	—	—	—	1	—
GRIEVE, H. R. R., Honorary Secretary	10	7	—	3	—	—
HALLIDAY, G. C., ¹ President-Elect	5	7	1	8	1	—
HAMILTON, MARIE M.	9	—	—	12	—	—
HOWE, G. L.	9	—	—	—	—	—
MACDONALD, R. H.	9	11	—	12	—	—
MAGUIRE, F. A.	7	—	—	—	—	—
MCINTOSH, A. M., ¹ Past President	8	10	—	—	—	—
MADDOK, J. K., President and Honorary Librarian	10	11	3	9	—	1
MURRAY, A. J.	8	10	—	—	—	2
NELSON, T. Y.	9	—	—	12	—	—
RAWLE, K. C. T.	8	—	—	8	—	—
SIMMONS, W. F.	10	12	—	10	—	—
THOMAS, A. C.	8	11	—	—	—	—
THOMSON, E. F.	9	—	3	—	—	—
WILLCOCKS, G. C.	4	—	—	—	—	—
WILLIS, H. H.	9	—	—	—	1	—
Meetings held	10	12	3	12	1	2

¹ Full-time military service.

² Leave of absence from May to August.

Blue Mountains (affiliated 1944): *Chairman*, Dr. A. M. Allan; *Honorary Secretary*, Dr. N. Larkins. Membership 22. Four meetings were held.

Border (affiliated 1908): *Chairman*, Dr. R. A. Robertson; *Honorary Secretary*, Dr. F. G. Favalaro. Membership 15. Three meetings were held.

Brisbane Water District (affiliated 1948): *Chairman*, Dr. S. K. Dwyer; *Honorary Secretary*, Dr. J. M. Dowling. Membership 12. Four meetings were held.

Broken Hill (affiliated 1942): *Chairman*, Dr. H. G. Hammond; *Honorary Secretary*, Dr. J. T. Cullen. Membership 13. Fifteen meetings were held.

Canterbury-Bankstown (affiliated 1930): *Chairman*, Dr. M. W. Matheson; *Honorary Secretary*, Dr. J. T. St. Leger Moss. Membership 54. Three meetings were held.

Central Northern (affiliated 1910): *Chairman*, Dr. J. L. Deacon; *Honorary Secretary*, Dr. E. J. Egan. Membership 74. Five meetings were held.

Central Southern (affiliated 1909): *Chairman*, Dr. A. G. Wise; *Honorary Secretary*, Dr. J. P. Lyttle. Membership 44. Two meetings were held.

Central Western (affiliated 1910): *Chairman*, Dr. T. K. S. Whiting; *Honorary Secretary*, Dr. K. S. M. Brown. Membership 62. Three meetings were held.

Eastern District (affiliated 1913): *Chairman*, Dr. M. E. H. Elliott; *Honorary Secretary*, Dr. A. McNeill. Membership 36. Two meetings were held.

Eastern Suburbs (affiliated 1911): *Chairman*, Dr. A. D. Frost; *Honorary Secretary*, Dr. L. H. McMahon. Membership 135. Three meetings were held.

Far South Coast and Tablelands (affiliated 1935): *Chairman*, Dr. E. C. Blomfield; *Honorary Secretary*, Dr. J. F. Ireland. Membership 10. One meeting was held.

Hunter Valley (affiliated 1947): *Chairman*, Dr. K. Klein; *Honorary Secretary*, Dr. F. P. M. Solling. Membership 43. Two meetings were held.

Illawarra Suburbs (affiliated 1913): *Chairman*, Dr. G. H. Gall; *Honorary Secretary*, Dr. G. W. Ashby. Membership 77. Five meetings were held.

Kuring-gai District (affiliated 1929): *Chairman*, Dr. N. D. Barr; *Honorary Secretary*, Dr. J. Woolnough. Membership 73. Three meetings were held.

Northern District (affiliated 1911): *Chairman*, Dr. G. Archbold; *Honorary Secretary*, Dr. H. G. Royle. Membership 62. Three meetings were held.

North Eastern (affiliated 1913): *Chairman*, Dr. P. H. Doyle; *Honorary Secretary*, Dr. N. E. Brand. Membership 54. Three meetings were held.

Southern District (affiliated 1909): *Chairman*, Dr. Weeks White; *Honorary Secretary*, Dr. L. E. Goldsmith. Membership 51. Two meetings were held.

South Eastern (affiliated 1914): *Chairman*, Dr. J. B. Street; *Honorary Secretary*, Dr. M. C. McKinnon. Membership 37. Five meetings were held.

South Sydney (affiliated 1909): *Chairman*, Dr. L. E. Hewitt; *Honorary Secretary*, Dr. C. H. Jaede. Membership 44. Three meetings were held.

Warringah District (affiliated 1929): *Chairman*, Dr. G. M. B. Hales; *Honorary Secretary*, Dr. M. Elliot Smith. Membership 138. Four meetings were held.

Western (affiliated 1908): *Chairman*, Dr. A. McLaren; *Honorary Secretary*, Dr. S. R. Dawes. Membership 91. Two meetings were held.

Western Suburbs (affiliated 1908): *Chairman*, Dr. N. McQueen; *Honorary Secretary*, Dr. S. Lackey. Membership 137. Five meetings were held.

Annual Meeting of Delegates.

The thirty-sixth annual meeting of delegates of the affiliated local associations of members with the Council was held on Friday, September 30, 1949.

The delegates present at the meeting were as follows: Blue Mountains, Dr. W. M. Roberts; Border, Dr. L. S. Woods; Broken Hill, Dr. J. B. Wilson; Brisbane Water District, Dr. J. M. Dowling; Canterbury-Bankstown, Dr. L. Abramovich; Central Southern, Dr. J. P. Lyttle; Central Northern, Dr. E. J. Egan; Central Western, Dr. G. N. M. Aitkens; Eastern Suburbs, Dr. C. M. Burns; Eastern District, Dr. A. McNeill; Far South Coast and Tablelands, Dr. J. F. Ireland; Hunter Valley, Dr. F. P. M. Solling; Illawarra Suburbs, Dr. G. W. Ashby; Kuring-gai District, Dr. H. S. Oag; Northern District, Dr. R. J. Jackson; North Eastern, Dr. J. L. Roberts; South Eastern, Dr. A. McL. Harper; South Sydney, Dr. C. H. Jaede; Warringah District, Dr. E. S. Stuckey; Western, Dr. R. D. Mulvey; Western Suburbs, Dr. R. F. Back.

Special Groups for the Study of Special Branches of Medical Knowledge.

Allergy (inaugurated 1947): *Chairman*, Dr. R. Steel; *Honorary Secretary*, Dr. Bernard Riley. Membership 9. Three meetings were held.

Anæsthesia (inaugurated 1934): *Chairman*, Dr. A. D. Morgan; *Honorary Secretary*, Dr. L. T. Shea. Membership 32. Six meetings were held.

Medicine (inaugurated 1924): *Chairman*, Dr. K. B. Noad; *Honorary Secretary*, Dr. S. G. Nelson. Membership 27. Four meetings were held, three in conjunction with meetings of the Branch.

Neurology, Psychiatry and Neurosurgery (inaugurated 1924): *Chairman*, Dr. G. Phillips; *Honorary Secretary*, Dr. F. J. Scanlan. Membership 70. Six meetings were held, four in conjunction with meetings of the Branch.

Obstetrics and Gynæcology (inaugurated 1925): *Chairman*, Dr. G. G. L. Stening; *Honorary Secretary*, Dr. F. N. Chenhall. Membership 105. Seven meetings were held, one in conjunction with a meeting of the Branch.

Orthopædic Group (British Medical Association (inaugurated 1923): *Chairman*, Dr. Hugh C. Barry; *Honorary Secretary*, Dr. W. S. L. Stening. Membership 20. Three meetings were held.

Oto-Rhino-Laryngological Society of New South Wales (inaugurated 1924): *Chairman*, Dr. B. B. Blomfield; *Honorary Secretary*, Dr. A. Bryson. Membership 46. Four meetings were held, one in conjunction with a meeting of the Branch.

Pædiatrics (inaugurated 1921): *Chairman*, Dr. R. A. R. Green; *Honorary Secretary*, Dr. D. G. Hamilton. Membership 57. Four meetings were held, one in conjunction with a meeting of the Branch.

Pathology (inaugurated 1924): *Honorary Secretary*, Dr. V. J. McGovern. Membership 63. Three meetings were held in conjunction with meetings of the Branch.

Radiology (inaugurated 1926): *Chairman*, Dr. J. A. Vote; *Honorary Secretary*, Dr. E. W. Frecker. Four meetings were held.

Resident Medical Officers' Special Group (inaugurated 1945): *Honorary Secretary*, Dr. R. V. MacFadzean.

Sociological Medicine (inaugurated 1944): *Chairman*, Dr. R. J. Murphy; *Honorary Secretary*, Dr. Bernard Riley. Membership 74. Six meetings were held, one in conjunction with a meeting of the Branch.

Surgery (inaugurated 1925): One meeting was held in conjunction with a meeting of the Branch.

Urology (inaugurated 1940): *Chairman*, Dr. K. Kirkland; *Honorary Secretary*, Dr. H. G. Cummine. Membership 12.

British Medical Association Lectures.

Lectures were arranged as follows:

Eastern District Medical Association, Coffs Harbour, March 18, 1950: Dr. K. B. Noad, "Some Common Nervous Symptoms".

Northern District Medical Association, Tamworth, September 18, 1949: Dr. K. W. Starr, "Inguinal, Femoral and Umbilical Hernia".

Western Medical Association, Molong, September 25, 1949: Dr. Lorimer Dods, "Recent Trends in Pædiatrics".

Articles of Association.

At an extraordinary general meeting of the association held on December 20, 1949, Articles 11(a) and 69 were amended to read as follows:

11(a) Save as is otherwise provided by these Articles or the By-laws every Member shall pay to the Association an annual subscription for and in respect of each year commencing on the first day of January. Subject as is hereinafter provided the said annual subscription shall be of such amount or amounts as shall from time to time be prescribed by the By-laws and the amount or respective amounts prescribed by the By-laws as the annual subscription shall be due and payable by Members to the Association in advance on the first day of January in each year or in the case of Members elected during the year on the date of election. Provided always that the Council may at any time during any year but not later than the thirtieth day of September by resolution increase the amount of any annual subscription as prescribed by the By-laws to such amount as it shall determine but so that the amount of the increase shall not exceed twenty-five per centum of the amount as prescribed by the By-laws of the annual subscription thereby increased and thereupon the amount so determined by the Council shall be the annual subscription for such year of the Mem-

bers to whom such increase applies in lieu of the annual subscription of such Members as prescribed by the By-laws. Notice of such resolution shall be served on the Members to whom the increase applies in the manner hereinafter provided for the service of notices within one month after the date of the passing of the same, and the amount by which the annual subscription of such Members as prescribed by the By-laws is thereby increased shall be due and payable by such Members to the Association on the date of such service.

69. If upon the winding up or dissolution of the Association there remains after satisfaction of all its debts and liabilities any property whatsoever the same shall not be paid to or distributed among the members of the Association but shall be given or transferred to some other institution or institutions having objects similar to the objects of the Association and which shall prohibit the distribution of its or their income and property among its or their members to an extent at least as great as is imposed on the Association under or by virtue of Clause 4 of the Memorandum of Association of the Association such institution or institutions to be determined by the Members of the Association at or before the time of dissolution and in default thereof by the Chief Judge in Equity of the Supreme Court of New South Wales or such other Judge of that Court as may have or acquire jurisdiction in the matter and if and so far as effect cannot be given to the aforesaid provision then to some charitable object.

By-Laws.

At an extraordinary general meeting of the association held on December 20, 1949, By-law 4 relating to annual subscription was amended by the addition of a new clause 4(g), viz.:

4(g) A person who shall have been a member of the Association for a period of fifty years shall not be required to pay any Annual Subscription as from the 1st January next succeeding the expiration of such period.

The Federal Council of the British Medical Association in Australia.

Meetings.

The Federal Council of the British Medical Association in Australia met in Sydney on July 22, 23, 24 and 25, 1949, and in Melbourne on January 16, 17, 18 and 19, 1950.

At these meetings the Branch was represented by Dr. A. J. Collins, Dr. H. R. R. Grieve, Dr. W. F. Simmons and Dr. A. J. Murray, excepting that at the meeting in Melbourne Dr. A. C. Thomas acted as a substitute for Dr. A. J. Murray.

Sir Henry Newland.

The Council was pleased to give its support to a proposal to commemorate the outstanding services of Sir Henry Newland to the medical profession.

The Federal Council has decided to invite subscriptions to establish a Henry Simpson Newland Prize in Surgery. A communication will be forwarded to members on this subject at an early date.

British Commonwealth Medical Conference.

Dr. J. G. Hunter, Medical Secretary, represented the Federal Council of the British Medical Association in Australia at the first meeting of the British Commonwealth Medical Conference held at Saskatoon, Saskatchewan, Canada, on June 7, 8 and 9, 1949.

National Health Service.

On Friday, February 24, 1950, a convention of representatives of local associations, special groups, the Women's Medical Society of New South Wales, the Public Medical Officers' Association of New South Wales, the teaching hospitals and the non-teaching hospitals with Council, was held to consider the Commonwealth Government's proposals for a national health service. On March 9, 1950, these proposals were considered at an extraordinary general meeting of the association.

Medico-Pharmaceutical Liaison Committee.

A joint committee, known as the Medico-Pharmaceutical Liaison Committee, and consisting of representatives of the British Medical Association, New South Wales Branch, and of the Pharmaceutical Society of New South Wales, was established for the purpose of considering matters of mutual interest to both organizations.

The Branch is represented on the committee by the President, Dr. J. K. Maddox, Dr. W. F. Simmons, Dr. G. L. Howe and the Medical Secretary, Dr. J. G. Hunter.

Repatriation Medical Officers' Association.

The association rendered financial assistance to the Repatriation Medical Officers' Association in its claim before the Public Service Arbitrator for an increase in salaries. Members in private practice gave evidence before the Arbitrator.

Mass Immunization Against Diphtheria.

Following representations made to the Minister for Health the remuneration payable to medical practitioners for services rendered in connexion with mass immunization campaigns against diphtheria has been increased to £2 2s. for the first hour and £1 1s. for each succeeding hour or part thereof.

Subsidized Practices.

As a result of representations made to the Minister for Health, the remuneration payable in those practices in sparsely populated areas in which medical practitioners are providing full-time medical services on a subsidized basis has been increased. Whereas previously the guaranteed income was £1000 per annum, it is now £1200 per annum.

Department of Medical Sociology and Research.

The department has been engaged mainly in continuing the work of popular education in health and medical subjects. As previously, the chief medium has been broadcasting, and some 160 talks, including news commentaries and an "Armchair Chat", were prepared for delivery by the Spokesman of the association. Material also was supplied to the Press to assist presentation of medical news and articles.

The Australian Broadcasting Commission leaves the choice of subjects to the Association, but the Spokesman has given a number of talks suggested by listeners (for example, on "Arthritis", "Pink Disease" and "Spastic Colon"), and has answered questions submitted on matters of health and nutrition. The "A.B.C." Director of Talks, writing on December 29 last, expressed his appreciation of the talks contributed and his desire that they should be continued in the present year.

British Medical Association Food Parcels Fund.

As a result of the excellent response by members to the appeals made by Council some twelve months ago for contributions to the British Medical Association Food Parcels Fund, it was possible to maintain a continuous flow of parcels throughout the year to the beneficiaries of the Royal Medical Benevolent Fund.

A further appeal was made towards the end of February of this year in order that the flow of parcels may be continued.

British Medical Agency of New South Wales, Limited.

The annual general meeting of the British Medical Agency of New South Wales, Limited, was held on October 4, 1949.

In presenting the directors' report, Dr. W. F. Simmons, who occupied the chair in the absence of the chairman, Dr. George Bell, pointed out that the activities of the company had resulted in a smaller margin of profit than the previous year. This was due to a limitation in the sales and transfers of practices following unusual activity in this field in the immediate post-war years. The agency had maintained its services to the members of the profession, to whom the directors looked for continued support in the future.

Medical Finance, Limited.

The annual meeting of Medical Finance, Limited, was held on October 4, 1949.

In presenting the directors' report, Dr. W. F. Simmons, who occupied the chair in the absence of the chairman, Dr. George Bell, stated that the activities of the company had resulted in a small profit for the year. With more attractive rates of interest available to prospective borrowers elsewhere, the activities of the company were necessarily restricted.

Premises Revenue Account.

The Premises Revenue Account discloses a net surplus of £1167 as against a net surplus of £2332 for the year ended December 31, 1948, thus showing a decrease of £1165 in the net surplus revenue earned. This decrease is accounted for by a net increase in expenditure of £1191 and a net increase of income of £26.

BRANCH ACCOUNT.
Income and Expenditure Account for Year ended December 31, 1949.

1949.	£	s.	d.	£	s.	d.
To Salaries	5,311	12	6			
" Rent—Offices <i>et cetera</i>	1,000	0	0			
" Printing and Stationery	788	17	2			
" Stamps and Telegrams	769	4	11			
" Telephone	209	11	11			
" Code Address	2	4	6			
" Travelling Expenses	146	7	9			
" Insurance	9	5	10			
" Exchange and Bank Charges	10	16	10			
" Refreshments—Meetings	37	18	0			
" Newspapers	9	8	0			
" Sundry Petty Expenses	70	6	2			
" Tea Money	97	11	7			
" Federal Council	2,990	8	0			
" Legal Expenses	52	9	0			
" Repairs to Furniture and Equip- ment	32	8	6			
" Pay Roll Tax	124	3	9			
" Medical Benefits Fund Staff	12	11	6			
" Donations— Flying Doctor Service	100	0	0			
Repatriation Dept. Medical Officers Association	220	0	0			
N.S.W. College of Nursing	26	5	0			
				12,021	10	11
" Depreciation— Library	326	7	1			
Office Furniture and Equip- ment	70	6	0			
				396	13	1
" Staff Superannuation Fund				466	9	9
" Balance, being Surplus for the Year ended December 31, 1949, Transferred to Accumulated Funds Account				3,029	6	5
				£15,914	0	2

1949.	£	s.	d.	£	s.	d.
By Subscription Revenue—						
1949	20,129	2	6			
1948	240	13	6			
Previous Years	22	0	0			
				20,391	16	0
Less Proportion due to— British Medical Association	3,652	10	10			
THE MEDICAL JOURNAL OF AUS- TRALIA	1,756	11	9			
				5,409	2	7
				14,982	13	5
" Interest	300	8	2			
" Rent Assembly Hall	113	8	6			
" Broadcasting Fees	396	7	6			
" Sales C.F.A.	31	17	7			
" Refund Expenses (Federal Council)	89	5	0			
				931	6	9

£15,914 0 2

Elected as Representing Metropolitan Local Associations.—
Dr. G. F. Elliott, Dr. G. F. Howe.

Messrs. F. W. Duesbury and Company were appointed auditors for the ensuing year.

ELECTION OF REPRESENTATIVE AND DEPUTY REPRESENTATIVE
AT THE ANNUAL (1950) REPRESENTATIVE MEETING OF THE
BRITISH MEDICAL ASSOCIATION AT SOUTHPORT.

It was resolved on the motion of Colonel A. M. McIntosh, seconded by Dr. E. F. Thomson, that the appointment of a representative and a deputy representative to attend the Annual Representative Meeting of the British Medical Association (1950) at Southport should be left in the hands of the Council.

APPOINTMENT OF DELEGATE TO ATTEND THE ANNUAL
MEETING OF THE BRITISH MEDICAL ASSOCIATION
(1950) AT LIVERPOOL.

It was resolved on the motion of Colonel A. M. McIntosh, seconded by Dr. E. F. Thomson, that the appointment of a delegate to attend the annual meeting of the British Medical Association (1950) at Liverpool should be left in the hands of the Council.

INCOMING PRESIDENT'S ADDRESS.

Dr. G. C. Halliday delivered his address. He said that Heraclitus, in the year 513 B.C., had declared: "All is flux, nothing is stationary." Times had not changed. Science, by unleashing the tremendous forces of atomic energy, had presented the world with a problem, and, if man was to survive its abuse, it would require a standard of international cooperation not so far approached.

The greatest danger arose from the clash of opposing ideologies with their fanatical adherents, who would impose their wills on the free people of the world. In a smaller sphere great developments had taken place throughout the world with respect to the medical profession. The increasing complexity of medical knowledge and treatment provided difficulties within the profession itself. Outside the profession an increasing demand had arisen for a medical service which would be available to all. In the practice of their profession medical men and women were demanding freedom, a sober freedom out of which sprang their deepest hopes in aspiring to their ideals.

Few would quarrel with these aspirations, but fewer still could survey beyond the horizon and forecast the future of medicine in one hundred years. It would seem that in

their building for the future, the keystone of medical practitioners' thoughts must rest primarily on one of service to the people. This thought of service should be guided by the highest principles, principles which should never be dulled by tempting blandishments of pecuniary advantage or so-called "social security".

Political philosophies envisaging the socialization of the medical profession might spring from the purest of motives, but socialization should be resisted to the utmost if, within their minds and hearts, medical practitioners remained convinced that to embrace such a form of medicine would bring about a retrograde standard of service to the community.

Dr. Halliday went on to say that he would not weary his audience with a reiteration of their declared concepts for a medical service. The Association should justly be proud of its recent success when freedom to prescribe was threatened, a success due to the belief by members in their cause and to a unity of members, possibly unequalled in the medical profession in any part of the world.

It was wise to pause and perhaps to wonder how such a unity of opinion and purpose had been achieved. Disturbing knowledge of recent changes in the profession in Great Britain, and to a lesser extent in New Zealand, had undoubtedly helped to crystallize in the minds of Australian medical practitioners a conviction that the alterations proposed would be detrimental to the people. Such an overwhelming feeling, however, could not have expressed itself and have had its opinions moulded into appropriate and ready action without an alert federal body, which could with truth and sincerity express and press for the views of its members. A debt of gratitude was owed to the Federal Council for its zealous and untiring work, but its efforts had not been obtained without ceaseless exertion, and perhaps it was timely to pay tribute to senior members of the New South Wales Branch Council.

Dr. Halliday then referred with appreciation to the valuable services given to the Branch by Sir Charles Blackburn, Dr. George Bell, Dr. B. T. Edey, Dr. W. F. Simmons, Dr. A. J. Collins, Dr. H. R. R. Grieve and Dr. J. G. Hunter. He discussed the sphere in which each of these members had laboured and referred to their achievements.

He concluded his address by saying that just as no one could attain perfection in his knowledge of medicine, it could not be expected that conditions of medical practice would reach a Utopian standard. The members of the profession, without deviating from their deeply rooted principles, should be prepared to make what sacrifices were necessary to achieve a form of medical practice for the future, based on service to the community and equitable to an honourable profession.

INDUCTION OF PRESIDENT.

Dr. J. Kempson Maddox inducted the president for the year 1950-1951 (Dr. G. C. Halliday). Dr. Halliday thanked the members for his election.

Post-Graduate Work.

POST-GRADUATE MEDICAL EDUCATION COMMITTEE OF THE UNIVERSITY OF QUEENSLAND.

Lectures in Anatomy, Physiology and Pathology.

Anatomy.

TWENTY two-hour weekly lecture-demonstrations, suitable for candidates for M.S. Part I or F.R.A.C.S. Part I will be given by Professor H. J. Wilkinson and Associate Professor M. F. Hickey in the Anatomy Department, Medical School, Victoria Park, Brisbane. Gross anatomy, embryology and histology will be included in the syllabus. The first meeting of the course commenced at 7.30 p.m. on Wednesday, April 26, 1950. A fee of £14 14s. will be charged for the complete course, or £7 7s. for a course of ten lectures.

Physiology.

Professor W. F. Macfarlane will conduct a post-graduate course of thirty lectures in physiology at the School of Physiology, George Street, Brisbane, for four months commencing at 7.30 p.m. on Monday, June 12, 1950, and thereafter on succeeding Monday evenings. Professor Macfarlane will continue his lecture-demonstrations on Thursday evenings at the Mater Misericordiae Hospital, South Brisbane, and will invite members of the pathology class to attend these sessions.

Pathology.

Professor A. J. Canny has agreed to hold weekly discussion groups for doctors studying for a higher degree which includes pathology. Further details of these meetings will be circulated later.

Fees.

Fees for all lectures are payable to the university accountant.

Visiting Lecturers.

Professor F. J. Browne, recently Professor of Obstetrics and Gynaecology in University College, London, will be in Brisbane to attend the Australasian Medical Congress (British Medical Association). On Friday evening, May 26, 1950, Professor Browne will lecture to members of the medical profession at the Medical School, Herston Road, Brisbane, at 8.15 p.m. The subject of his lecture will be "Chronic Hypertension in Pregnancy", and all medical practitioners may attend.

University Intelligence.

MELBOURNE UNIVERSITY UNION.

GRADUATES' WEEK, 1950.

FOLLOWING its successful inauguration at this time last year, the second annual Graduates' Week will be held in the University of Melbourne from May 22 to May 27, 1950.

Graduates' Week, 1950, commences with a Union banquet on Monday, May 22, and the programme thereafter will include public addresses by Professor Geoffrey Sawyer and Professor D. B. Copland, an evening of university films, a sports afternoon followed by a Blues' dinner, and on Thursday and Saturday two performances of Christopher Fry's "A Phoenix Too Frequent" by the Tin Alley Players in the Union Theatre. On Friday, May 26, an evening programme designed to present some serious aspects of present work in the humanities and the social sciences has been arranged, which, it is hoped, will prove of wide general interest. Graduates' Week comes to a close with a morning service in Queen's College Chapel on May 28.

In all or any part of the activities of Graduates' Week, 1950, graduates or former students of the university, members of their families and their friends are most cordially invited to take part. Detailed programmes, with provision for individual acceptances, are being sent to all those currently listed in the roll of graduates.

Obituary.

RAYMOND ASHER MILTON ALLEN.

WE are indebted to Dr. R. D. Mulvey for the following appreciation of the late Dr. Raymond Asher Milton Allen.

The death of Dr. R. A. M. Allen recalls memories of nearly forty years of close association and an enduring friendship. We met as undergraduates in science, when he occupied, by virtue of his name, pride of place in the roll-call at formal lectures. He was then in the full vigour of youth, and was among the first to enlist (August 16, 1914) for active service in World War I. After a period of training at the Royal Military College, Duntroon, he gained his commission and was attached to the 30th Battalion. I renewed my association with him at the Suez Canal defences, whence we embarked for France in May, 1916. Ray was very popular with his fellow officers and devoted to the welfare of the



men under his care. He distinguished himself in the Battle of Fleurbaix, the initial engagement of the Australian Imperial Force in France, and was mentioned in dispatches. Subsequently he was awarded the Military Cross on the Somme, where he was severely wounded. His right arm was shattered above the elbow, and he was invalided to Australia in August, 1917. Such a crippling disability did not daunt him, as he proceeded to reorientate his life with his left hand.

His first civilian activity was to become a foundation member of the Imperial Service Club, which he served for many years as a committeeman, and he assisted in establishing it as one of the most flourishing clubs in Sydney. The following year he embarked on his medical course. Despite his handicap, his name again occupied first place on this occasion in order of merit—in the final year. Dr. Ray Allen was not content with this academic distinction, as he prepared for further emergencies by embarking on the lawcourse for another (?) three years. He was the obvious choice as secretary of the Medical Defence Union.

Dr. R. A. M. Allen's work as a physician in Macquarie Street, Sydney, was characterized by the same thoroughness and tenacity of purpose as he evinced in the war years. Appointed to the honorary staff of the Sydney Hospital, he became an honorary lecturer in medicine and therapeutics as well as tutor in anaesthetics. His life has been one of

service and of achievement, of conspicuous success in face of overwhelming odds. Above all, his outstanding cheerfulness at all times made him a delightful companion. He had a large circle of friends in all walks of life, but particularly in the club which he was largely instrumental in founding and developing. The sympathy of the profession is extended to his wife and his daughter, Dr. Loraine Allen (now Mrs. S. W. Dobell-Brown), in their irreparable loss.

HENRY LAURENCE TOOTH.

We regret to announce the death of Dr. Henry Laurence Tooth, which occurred on May 2, 1950, at Killara, New South Wales.

Public Health.

INTERNATIONAL SERODIAGNOSTIC CONFERENCE (SYPHILIS).

THE following information is published at the request of the Director-General of Health, Canberra.

Advice has been received that an International Serodiagnostic Conference (Syphilis) will be organized by the World Health Organization and held in late 1951 or early in 1952.

Having regard to the continual use in all parts of the world of a great variety of seroreactions, with often divergent results, the appearance of several new serodiagnostic tests which were not evaluated at previous international conferences, and the development of purified cardiolipin-leithin antigens (Panghorn), the treponema immobilization reaction (Nelson) and the general need for determining the most useful and practical serodiagnostic methods for mass serological examination, invitations are

extended to authors of methods for the serodiagnosis of syphilis to register preliminary applications for admission to the World Health Organization Serodiagnostic Laboratory Conference to be held after October, 1951.

The procedure and requirements are as follows:

1. Name, position, laboratory, address of applicant, including personal and professional data and lists of scientific publications, are to be sent to the World Health Organization, Geneva, Switzerland, accompanied by a statement indicating in detail the advantages offered by the special test and the laboratories at present employing the particular technique (as far as possible).

2. Only an author-serologist or a serologist designated by him will be allowed to perform the author's procedure during the conference; each author-serologist can enter several reactions, but only one may be accepted.

3. A suitable number of participants in the conference will be selected by the World Health Organization on the basis of the advice given by the committee of World Health Organization on serology and laboratory aspects, scientific, technical and geographical and other relevant factors being taken into account.

4. The preliminary applications are to be received by the World Health Organization not later than July 15, 1950.

The Royal Australasian College of Physicians.

TWELFTH ANNUAL MEETING.

The twelfth annual meeting of The Royal Australasian College of Physicians was held at Auckland, New Zealand, on Wednesday and Thursday, March 22 and 23, 1950. This was the first occasion upon which a full meeting of the College had been held in the Dominion.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED APRIL 22, 1950.¹

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory. ²	Australian Capital Territory. ³	Australia. ⁴
Ankylostomiasis	2	..	..	..	..	..	2
Anthrax
Beriberi
Bilharziasis
Cerebro-spinal Meningitis	..	1	..	..	..	..	..	..	1
Cholera
Coastal Fever(a)	1	..	..	..	..	..	1
Dengue
Diarrhoea (Infantile)	3(2)	..	..	..	..	..	3
Diphtheria	12(10)	30(16)	5(3)	1(1)	2(1)	1(1)	..	..	51
Dysentery (Amoebic)
Dysentery (Bacillary)	3(3)	..	..	..	..	..	..
Encephalitis Lethargica	1	..	..	..	..	..	..	..	1
Erysipelae
Filariasis
Helminthiasis
Hydatid
Influenza	1(1)	..	..	..	..	1
Lead Poisoning
Leprosy	1(1)	..	..	..	..	1
Malaria(b)	11(10)	..	..	..	..	11
Measles
Plague
Polio-myelitis	12(6)	11(4)	..	29(27)	2(1)	..	..	..	54
Psittacosis
Puerperal Fever	1	..	1	..	..	..	..	..	2
Rubella(c)
Scarlet Fever	20(14)	20(15)	1	13(7)	2(2)	2	..	..	67
Smallpox
Tetanus
Trachoma
Tuberculosis(d)	47(30)	9(6)	12(8)	6(3)	14(7)	..	..	..	88
Typhoid Fever(e)
Typhus (Endemic)(f)	2(1)	..	3(3)	..	..	..	5
Undulant Fever
Well's Disease(g)
Whooping Cough	1	..	..	..	..	1
Yellow Fever

¹ The form of this table is taken from the *Official Year Book of the Commonwealth of Australia*, Number 37, 1946-1947. Figures in parentheses are those for the metropolitan area.

² Figures not available.

³ Figures incomplete owing to absence of returns from the Northern Territory and Australian Capital Territory.

⁴ Not notifiable.

(a) Includes Mosaic and Sarina fevers. (b) Mainly relapses among servicemen infected overseas. (c) Notifiable disease in Queensland in females aged over fourteen years. (d) Includes all forms. (e) Includes enteric fever, paratyphoid fevers and other Salmonella infections. (f) Includes scrub, murine and tick typhus. (g) Includes leptospirosis, Well's and para-Well's disease.

The office-bearers of the College for 1950-1952 took office at this meeting. They are Dr. A. Holmes à Court (President), Dr. E. Britten Jones, Dr. W. S. Newton and Dr. R. H. Quentin-Baxter (Vice-Presidents), Dr. C. G. McDonald (Censor-in-Chief), Dr. H. Maynard Rennie (Honorary Secretary) and Dr. W. P. MacCallum (Honorary Treasurer). Councillors of the College are Sir Charles Blackburn, Dr. T. M. Greenaway, Dr. J. G. Hayden, Dr. Bruce Hunt, Dr. W. W. S. Johnston, Dr. Alex P. Murphy, Dr. W. S. Newton, Dr. Harold J. Ritchie, Dr. S. A. Smith, Dr. H. Hume Turnbull, Dr. Allan S. Walker, Dr. Ralph Whishaw, Dr. A. E. Rowden White and Dr. Ian J. Wood.

At the meeting of the general body of Fellows, two Fellows were elected under the provisions of article 40, which provides for the admission to fellowship of persons distinguished in any branch of medical science or internal medicine. Those elected under this article were Dr. Robert Stevenson Aitken, M.D. (N.Z.), Ph.D. (Oxon.), LL.D. (Hon. Dalhousie), F.R.C.P. (London), F.R.C.P. (Edin.), Vice-Chancellor of the University of Otago; and Dr. Ian Murray Mackerras, M.B., Ch.M. (Syd.), B.Sc. (Syd.), Director of the Queensland Institute of Medical Research.

The following Members were elected by the general body of Fellows to Fellowship of the College: Dr. S. D. Allen (New South Wales), Dr. F. O. Bennett (New Zealand), Dr. H. G. D. Breidhal (Western Australia), Dr. C. R. D. Brothers (Tasmania), Dr. F. A. E. Lawes (New South Wales), Dr. Harold Love (Queensland).

An examination for membership of the College was conducted by the New Zealand Board of Censors prior to the meeting. The Council admitted to membership the following successful candidates: Dr. D. M. G. Beasley, Dr. H. Black, Dr. G. L. Brinkman, Dr. J. A. K. Cunningham, Dr. A. O. M. Gilmour, Dr. L. K. Gluckman, Dr. J. A. Keeling, Dr. E. G. Loten, Dr. P. A. Restall, Dr. E. S. Thodey.

ORDINARY MEETING, 1950.

The ordinary meeting of the College will take place at Melbourne on Thursday, Friday and Saturday, October 26, 27 and 28, 1950. An examination for membership will be held prior to the meeting.

Nominations and Elections.

The undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Grieve, Shirley Euphrosyne, M.B., B.S., 1950 (Univ. Sydney), Goulburn District Hospital, Goulburn, New South Wales.

Deligdisz, Wolf, registered in accordance with the provisions of Section 17 (1) (c), *Medical Practitioners Act, 1938-1945*, Albury District Hospital, Albury, New South Wales.

The undermentioned has applied for election as a member of the Tasmanian Branch of the British Medical Association:

Slaweska, Valda Doreen, M.B., B.S., 1949 (Univ. Melbourne), Launceston General Hospital, Launceston.

Notice.

ROYAL PRINCE ALFRED HOSPITAL MEDICAL OFFICERS' ASSOCIATION.

The sixteenth annual reunion of the Royal Prince Alfred Hospital Medical Officers' Association will be held at the hospital, Camperdown, New South Wales, from August 21 to September 1, 1950, inclusive. There will be post-graduate courses in medicine, surgery and gynaecology and obstetrics, and a round of social functions. The visit of the McIlraith Guest Professor for 1950, Donald Hunter, M.D., F.R.C.P., former Censor-in-Chief of the Royal College of Physicians, London, and physician to the London Hospital, will coincide with the reunion, and Dr. Hunter will participate extensively in the clinical programme. Non-members of the association who are graduates in medicine are eligible to attend the post-graduate courses, the fee being five guineas. By courtesy of the Councils of Saint Andrew's College and the Women's College within the University of Sydney, accommodation will be available for a limited number of those attending the reunion, members and non-members. Early application to attend any one of the courses and for accommodation should be made to the Secretary, Royal Prince Alfred Hospital

Medical Officers' Association, Camperdown, New South Wales. Detailed syllabuses of each course have already been sent to members and are available to non-members on application to the Secretary.

Diary for the Month.

MAY 15.—Victorian Branch, B.M.A.: Finance, House and Library Subcommittee.

MAY 16.—New South Wales Branch, B.M.A.: Medical Politics Committee.

MAY 17.—Western Australian Branch, B.M.A.: General Meeting.

MAY 18.—New South Wales Branch, B.M.A.: Clinical Meeting.

MAY 18.—Victorian Branch, B.M.A.: Executive Meeting.

MAY 23.—New South Wales Branch, B.M.A.: Ethics Committee.

MAY 24.—Victorian Branch, B.M.A.: Council Meeting.

MAY 25.—New South Wales Branch, B.M.A.: Branch Meeting.

MAY 26.—Federal Council of the B.M.A. in Australia—Brisbane.

MAY 26.—Queensland Branch, B.M.A.: Council Meeting.

MAY 27-JUNE 3.—Australasian Medical Congress (B.M.A.)—Brisbane.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135 Macquarie Street, Sydney): Ashfield and District United Friendly Societies' Dispensary; Balmuir United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phoenix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federal Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178 North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and book-sellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rate is £3 per annum within Australia and the British Commonwealth of Nations, and £4 10s. per annum within America and foreign countries, payable in advance.